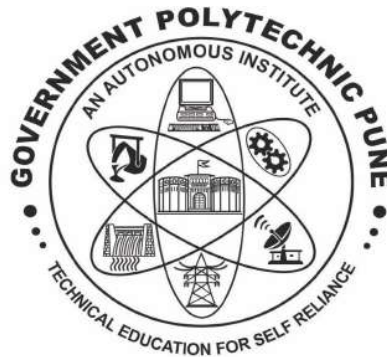


GOVERNMENT POLYTECHNIC, PUNE

(AN AUTONOMOUS INSTITUTE OF GOVT. OF MAHARASHTRA)

180 OB CURRICULUM

(Since 2019-20)



DIPLOMA IN DRESS DESIGNING AND GARMENT MANUFACTURING PROGRAMME

IN

**DEPARTMENT OF DRESS DESIGNING AND GARMENT
MANUFACTURING**

GOVERNMENT POLYTECHNIC, PUNE

Year of submission: (March 2022)

GOVERNMENT POLYTECHNIC, PUNE

DRESS DESIGNING AND GARMENT MANUFACTURING

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Government Polytechnic, Pune
(An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing
Vision and Mission of Institute

Vision:

To develop self-reliant, versatile, innovative, quality conscious engineers for betterment of society.

Mission:

- **M1:** Imparting updated curriculum in association with stakeholders.
- **M2:** Providing with the state of art infrastructure & facilities.
- **M3:** Set up strategic alliance with industries.
- **M4:** Enhancing e-governance.
- **M5:** Continuous development of faculty & staff.

Vision and Mission of Dress Designing and Garment Manufacturing
Department

Vision:

Develop self-reliant, versatile, innovative, quality conscious designers for betterment of garment industry and society.

Mission:

- **M1:** Develop curricula in interaction with garment industry for better learning outcome.
- **M2:** Update staff knowledge and skills through training.
- **M3:** Provide modern lab facilities and infrastructure.
- **M4:** Enhance overall personality and lifelong learning of graduates.

Programme Educational Objectives (PEOs)

PEO1: Develop entrepreneurship qualities with ethics and soft skills.

PEO2: Provide Platform of lifelong learning to succeed in industry.

PEO3: Apply Principles of garment designing, garment manufacturing and retail marketing to solve the real-world problems.

PEO4: Pursue careers in the area of garment industry.

PROGRAM OUTCOMES (POs):

1.Basic and Discipline Specific Knowledge- Apply fundamental knowledge of textile, illustration, drafting, cutting, stitching and surface techniques for specialized garments.

2.Problem Analysis- Identify and analyze well defined designing and marketing problems using standard methods.

3.Design/Development of Solutions-Design solutions for well-defined technical problems and assist with the design process to meet specified needs.

4.Garment Manufacturing Tools, Experimentation and Testing- Apply modern garment manufacturing tools and appropriate techniques to conduct standard tests and measurements.

5.Engineering Practices for Society,Sustainability and Environment- Apply appropriate technology in context of society, sustainability, environment and ethical practices.

6.Project Management- Use apparel management principles individually, as a team member or leader to manage project and effectively communicate well-defined industrial activities.

7.Lifelong Learning- Ability to analyze individual needs and engaged in updating the context of technological changes.

Program Specific Outcomes (PSOs)

Student will be able to:

PSO1: -To design, manufacture, quality apparel as per industry standards.

PSO2: -To customize merchandise for enhancing societal standards of living.

Acknowledgment

I appreciate the trust laid in me by Dr. Abhay Wagh , the Director, Directorate of Technical Education, Mumbai ,Maharashtra and Dr. Dattatray Jadhav the Joint Director, Regional Office Directorate of Technical Education, Pune region, Maharashtra and Dr.Vinod Mohitkar, the Director, Maharashtra State Board of Technical Education, Mumbai , as the Chairman PBOS for 180 OB Curriculum Design and Development. I am grateful to Dr. Vitthal Bandal , Principal Government Polytechnic ,Pune for the trust bestowed on me during the Curriculum Design and Development activities. Dr.Vitthal Bandal's guidance, support and affection added to the joy of carrying out the assignments of the Curriculum Design and Development.

I recognise, rejoice and deeply appreciate Mr.Milind Dhongde the Chairman, Board of Studies (BOS)for support and work towards the Curriculum Design and Development and thanking to all the members of the Board of Studies(BOS) for their studied guidance and deep involvement as an expert.

I would like to thank and express my gratitude towards Dr. Dattatray Jadhav , Joint Director Regional Office Directorate of Technical Education, Pune region, Maharashtra as The Chairman Board of Governance and all the members of the Board of Governance (BOG)for all the support given.

I deeply appreciate all the industry expert and academicians in Program wise Board of Studies (PBOS) panel members of Dress Designing and Garment Manufacturing Program for the support and work towards the Curriculum Design and Development. Deep involvement, efficient outcome in the meeting held are highly recognised.

I thank Mr. A.S. Zanpure In-charge, Curriculum Development Cell and his team at institute level for Coordinating all the activities and support during this period.

I highly appreciate the unstinted support of colleagues, which I received during curriculum design and development activities . I recognise, rejoice and deeply appreciate their support and work towards this activity and thank them all, who took on the task of drafting instructional content for the curriculum and sharing their updated curriculum. Deep involvement, hectic activity and efforts of my colleagues together with similarity in thought for curricula content for Dress Designing and Garment Manufacturing Program , has brought this report to a stage of completion.

Vishwanath.G.Thambe
Head of Department and Chairman,
Dress Designing and Garment Manufacturing Program

Introduction

Government Polytechnic Pune is offering three years Diploma Programme in Dress Designing and Garment Manufacturing since 2007. Subsequently under World Bank Project this institute was awarded the status of an autonomous institute of Government of Maharashtra. There onwards Government Polytechnic Pune is holding the responsibility of designing and revising its own curriculum. The first curriculum was implemented in 2007 under academic autonomy and subsequently it was revised and implemented in 2007, 2014 and the current revision 2019 is being implemented from academic year 2019-20. The curriculum revision is now a regular activity and the mandatory requirement of involvement of industry personnel in curriculum revision helps in enhancing the relevance of the programme curriculum. Curriculum development since 2007 is illustrated as below:

Year of revision of curriculum	Name of curriculum	Total credits	Brief Information of Curriculum
2007	180Q	180	Quality function deployment based curriculum, 7 Levels
2014	180S	180	Objective based scientific curriculum, 5 Levels
2019	180 OB	180	Outcome based curriculum, 5 Levels

From Academic year 2019-20, newly revised curriculum named as **180 OB**, is being implemented for the first year and under revision for second- and third-year courses. Again, it's a 180-credit curriculum but based on outcome. Same procedure is adopted for revising the curriculum with addition of the unit outcomes, course outcomes and mapping of COs with POs and PSOs. The curriculum format for the course is also improvised with the addition of list of major equipment required along with specification, student activities, micro projects, special instructional strategies, learning resources including list of books with ISBN number and addresses of websites.

Methodology for revising the curriculum

The courses of curriculum are categorized into five different levels i.e.

- 1.Foundation Courses
2. Core Technology Courses
3. Basic Technology Courses
4. Applied Technology Courses
5. Diversified Courses.

Well defined methodology is adopted for revising the curriculum structure and the content detailing of individual courses is carried out by a group of experts, as shown in below flow diagram.

This is then approved by:

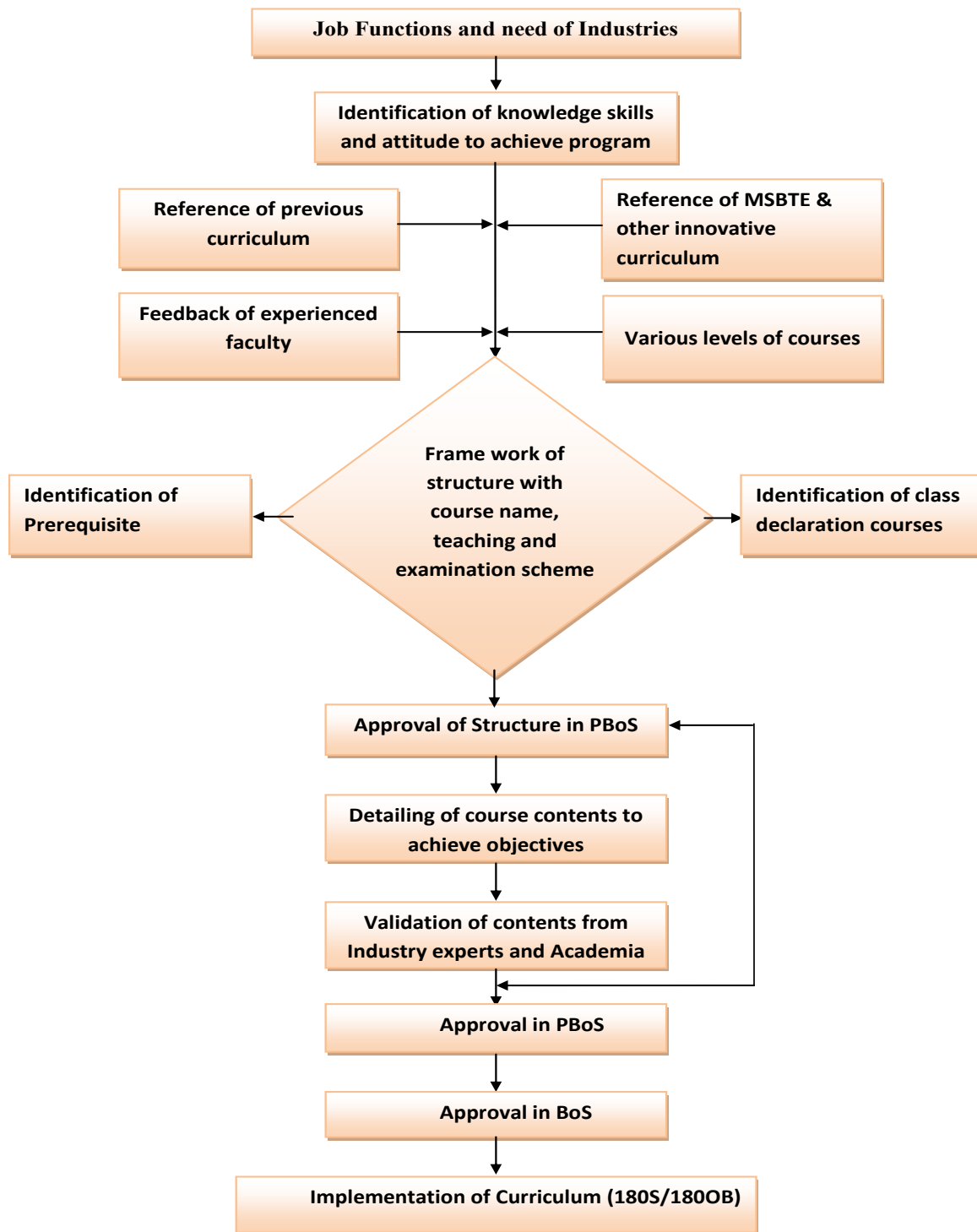
- 1.Programme Wise Board of Studies (PBOS)
2. Board of Studies (BOS)
- 3.Governing Body (GB).

The process adopted for designing the curriculum is as follows:

1. Identify skills (Cognitive, psychomotor and affective domain) by conducting industrial survey through questionnaire.
2. Record degree of identified skills of Diploma holder in industry on the scale of 1 to 4 (1- Most Important, 2-Important, 3- Less important, 4- Not preferred) through questionnaire.
3. Identify courses based on identified skills in industrial survey/feedback.
4. Categorize courses into three main streams
5. Placing the identified courses in appropriate levels.
6. Identify Course Objectives for each course based on the identified skill
7. Collection of feedback from experienced faculty about content details, teaching scheme and evaluation scheme
8. Revising the components of curriculum based on all the above feedbacks.
9. Validate the revised curriculum by Industry experts and Academia through conference.
10. Obtain equivalence from Maharashtra State Board of Technical Education Mumbai in due course of time.

Based on the feedback, in 180OB curriculum new courses such as History of Design, Fashion Styling, Textile Chemistry, Colour Theory, Fashion Communication, Technology of

Knit and Ethical sources and sustainability, are added at appropriate levels while few courses are improvised e.g. Textile Science-II, Industry Manufacturing Technology, Advanced Illustration Techniques, Surface Techniques, Digital Design Studio and Retail Merchandising . The special feature of this 180 OB curriculum is inclusion of six weeks in-plant training for all the students.



Flow diagram of Methodology for Curriculum Revision

Government Polytechnic, Pune
(An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing
List of members Governing Body (GB)

Sr. No	Name of the person	Organization and Designation	Designation in BOG committee
1.	Dr. Dattatray Jadhav	Joint Director of Technical Education, Pune	Chairman
2.	Mr. Milind Dhongade	Managing Director, Computer Home, Pune.	Member
3.	Mr. Shashank Hiwarkar	Director, ETH Limited, Pune.	Member
4.	Mr. Vikas Waghmare	Chief Engineer, Suma Shilp Ltd., Pune.	Member
5.	Mr. Kiran Jadhav	Managing Director, Accurate Industrial Control Pvt. Ltd., Pune.	Member
6.	Mr. Abhijit Phadke	Director-CTCI Test and Lab ops. Cell, Cummins India Ltd. Pune.	Member
7.	Dr. Bharat Ahuja	Director, Government College of Engineering, Pune.	Member
8.	Mr. Shahid Usmani	Deputy Secretary, Regional office, MSBTE, Mumbai	Member
9.	Dr. S.S. Kadar	Co-ordinator, National Institute for Technical Teachers Training & Research, Extension Center, Pune	Member
10.	Regional Officer	Western Regional Office (AICTE), 2 nd floor, Industrial Assurance Building, Veer Nariman Road, Church gate, Mumbai.	Member
11.	Prof. K. K. Gosh	FIE, Chairman, Pune Local Chapter, Institution of Engineers (India)	Member
12.	Mr. P. D. Rendalkar	General Manager, District Industries Centre, Agriculture College Compound, Shivaji Nagar, Pune	Member
13.	Dr. Vitthal Bandal	Principal, Government Polytechnic, Pune	Member Secretary

Government Polytechnic, Pune
 (An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing
List of members of Board of Studies (BoS)

Sr. No	Name of the person	Organization and Designation	Designation in BOS committee
1	Mr. Milind Dhongade	Managing Director, Computer Home, Pune	Chairman
2	Dr. Vitthal Bandal	Principal, Government Polytechnic, Pune	Invitee
3	Dr. Sunil Patil	Ex Director, Symbiosis Institute of Telecom Management, Pune	Member
4	Mr. Ravikiran Chaudhari	Foretech Precision Pvt. Ltd., A – 1, Sonal Residency, Ideal Colony, Kothrud, Pune.	Member
5	Mr. Ashok Atkekar	Project Management Consultant, Pune	Member
6	Mr. Avinash Joshi	Cubix Automation, Pune	Member
7	Mr. Sanjay Mahajan	Director, SM Engineers, Pune	Member
8	Mr. Prakash Raut	Superintendent Engineer, Maharashtra State Electricity Distribution Company Ltd., Rasta Peth, Pune	Member
9	Prof. Prakash Wani	Ex. Professor, Dept. of Electronics & Telecommunication Engg., Government College of Engineering, Shivajinagar, Pune.	Member
10.	Mrs. Minal Joshi	MD, Uzazi, Pune	Member
11.	Dr. Shaheed Usmani	Dy. Secretary, Maharashtra State Board of Technical Education, Pune Region, Pune	Member
12.	Mr. Vishwanath Tambe	Head of Civil Engg. Dept., Government Polytechnic, Pune	Member
13.	Mr. Vyankatesh Kondawar	Head of Civil Engg. Dept., (Second shift), Government Polytechnic, Pune	Member
14.	Dr. Sachin Bharatkar	Head of Electrical Engg. Dept., Government Polytechnic, Pune	Member
15.	Mr. Rajesh Shelke	Head of Electrical Engg. Dept., (second shift), Government Polytechnic, Pune	Member

16.	Mr. Rajreddy Shikari	Head of Electronics and Tele. Engg. Dept., Government Polytechnic, Pune	Member
17.	Dr. Sandiapan Narote	Head of Electronics and Tele. Engg. Dept., (Second Shift) Government Polytechnic, Pune	Member
18.	Dr. Nitin Kulkarni	Head of Mechanical Engg. Dept., and Academic Coordinator, Government Polytechnic, Pune	Member
19.	Mrs. Namita Kadam	Head of Metallurgical Engg. Dept., Government Polytechnic, Pune	Member
20.	Dr. Shankar Nikam	I/c Head of Computer Engg. Dept., Government Polytechnic, Pune	Member
21.	Mrs. Mrunal Kokate	Head of Information Technology Dept., Government Polytechnic, Pune	Member
22.	Mrs Shubahngi Shinde	I/c. Head of Dress Designing & Garment Mfg. Engg. Dept., Government Polytechnic, Pune	Member
23.	Dr. Vasudeo Jaware	Controller of Examinations, Government Polytechnic, Pune	Member
24.	Mr. Anant Zarpure	I/C. C.D.C., Government Polytechnic, Pune	Member

Government Polytechnic, Pune
(An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing
List of members of Program wise Board of Studies (PBoS)

Sr. No	Name of the person	Organization and Designation	Designation in PBOS committee
1	Mr. Vishwanath G. Tambe	I/C Head of Department, Department of D.D.G.M. Govt. Polytechnic, Pune	Chairman, PBOS
2	Mr. Mohammad S. Usmani,	Deputy Secretary (Technical), Regional office, MSBTE, Mumbai	Member
3	Mrs. Sushma V. Bane	Head of Department, Department of D.D.G.M. Govt. Polytechnic, Nasik	Member
4	Mrs. Kanchan Y. Kale	Assistant Secretary, MSBTE, Mumbai	Member
5	Mr. Kiran B. Modgi	Regional Secretary, Clothing Manufacturing Association of India, Pune	Member
6	Mr. Shrichand G. Tejwani	Owner, Trex Sports Wear, Raviwar Peth, Pune	Member
7	Dr. Nitin N. Hadap	Asst. Professor, Design Dept., Symbiosis International Institute, Pune	Member
8	Mr. Umesh P. Dharmadhikari	Professor, School of Fashion Technology, Pune	Member
9	Mr. Khandu B. Gaikwad	General Manager, Cotton King Pvt. Ltd. Co.,Baramati	Member
10	Ms. Aarti J. Rele	Freelancing Designer/ Owner, Jhelum Fashion House, Baner, Pune	Member
11	Mr. Prasad S. Kulkarni	Lecturer in Textile Dept., D K.T.E.'S, Ichalkaranji	Special Invitee
12	Mrs. Nisha C. Raisonni	Owner,Lavina Undegarments, Pune	Special Invitee
13	Mrs. Arshiya Y. Kapoor	Head of Department, Department of Fashion Designing, MIT college, Pune	Special Invitee
14	Mr. Kisan L. Kadam	Head designer, Sudithi Industries, Mumbai	Special Invitee
15	Ms. Prapti D. Mahajan	Asst. Manager	Special Invitee

		The Souled Store,Bhiwandi	
16	Mr. Swapneel D. Pokale	Senior Engineer, Supreme Non-woven Industries Ltd, Bhilad,Valsad	Special Invitee
17	Dr. Nitin G. Kulkarni	Academic Coordinator Govt. Polytechnic, Pune	Member
18	Mr. Anant S. Zanpure	CDC In charge Govt. Polytechnic, Pune	Member
19	Mrs. Chaitrali M. Ambikar	Lecturer, Department of D.D.G.M. Govt. Polytechnic, Pune	Member
20	Mrs. Shubhangi N. Shinde	Lecturer, Department of D.D.G.M. Govt. Polytechnic, Pune	Member
21	Mrs. Minal A.Yadav	Lecturer, Department of D.D.G.M. Govt. Polytechnic, Pune	Member
22	Ms. Suchita E. Kurzekar,	Lecturer, Department of D.D.G.M. Govt. Polytechnic, Pune	Member
23	Ms. Namita V. Gondane	Lecturer, Department of D.D.G.M. Govt. Polytechnic, Pune	Member
24	Mrs.Payal V. Toshniwal,	Lecturer, Department of D.D.G.M. Govt.Polytechnic, Pune	Member Secretary

Government Polytechnic, Pune
 (An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing
Curriculum Development Cell committee of Institute

Institute Level CDC Team:

Sr. No.	Name of Members	Post at CDC
1	Shri Anant Sharad Zanpure, Lecturer in Mechanical Engineering.	In-Charge
2	Dr Vijaykumar Kishanrao Jadhav , Lecturer in Electrical Engineering.	Member
3	Smt Pranita Mangesh Zilpe, Lecturer in E&TC Engineering.	Member

Program wise CDC In-charges :

Sr. No.	Name of Members	Name of Program
1	Smt. Sindhu R. Panapalli , Smt. J.N.Thorat	Civil Engineering
2	Smt Ujwala Tulangekar Shri S.P. Date	Electrical Engineering
3	Smt. Pranita Mangesh Zilpe Mrs. Sarika S. Chhatwani	Electronics & Telecommunication Engineering
4	Smt. Sudin B. Kulkarni Dr. Anniruddha A. Gadhikar	Mechanical Engineering
5	Shri A.V. Mehtre	Metallurgical Engineering
6	Smt. Megha G. Yawalkar Smt. Sayali P. Ambavane Smt. Lalita S. Korde Smt. T.P.Sharma	Computer Engineering

7	Mrs. Priyanka L. Sonawane	Information Technology
8	Mrs. Namita V. Gondane	Dress Designing & Garment Manufacturing
9	Smt. Shital A. Kakade	Science & Humanities
10	Smt Dipti V. Saurkar	Science & Humanities
11	Shri Sachin B. Yede	Science & Humanities
12	Smt. Saroj C. Patil	Science & Humanities

DIPLOMA IN DRESS DESIGNING AND GARMENT MANUFACTURING

Programme Structure TO BE IMPLEMENTED FROM YEAR 2019-20 (1800B-OB1)

Course Code	Course Name	Course Type	Compulsory/Optional	Pre-Req -isite	Teaching Scheme				Total Credits	Examination Scheme								Internal/External	Class Declaration	Section
					L	P	T	C		Theory		Practical/Oral		Total Marks						
										Min	Max	Min	Max	Min	Max	Min	Max			
LEVEL-1: Foundation Level Courses																				
DD1101	FUNDAMENTALS OF DRAWING	Regular	Compulsory	1 To 5	0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No
DD1102	MANUFACTURING TECHNOLOGY	Regular	Compulsory	6 To	4	4	0	8	32	80	NA	20	20	50 *	20	50	200	Internal	No	No
DD1103	BASICS OF DRAFTING	Regular	Compulsory	Compulsory	2	4	0	6	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No
DD1104	TOOL ENGINEERING	Regular	Compulsory	Compulsory	4	0	0	4	32	80	NA	20	NA	NA	NA	NA	100	-	No	No
HU1101	COMMUNICATION SKILLS I	Regular	Compulsory	Compulsory	2	0	1	3	16	40	NA	10	10	25 \$	10	25	100	Internal	No	No
HU1102	COMMUNICATION SKILLS II	Regular	Compulsory	HU1101	2	0	1	3	16	40	NA	10	NA	NA	20	50	100	-	No	No
6	Level Total				14	12	2	28	96	240		60	70	175	90	225	700			
LEVEL-2: Core Technology Courses A(All Compulsory)																				
CM2102	FUNDAMENTALS OF ICT	Regular	Compulsory		1	2	0	3	NA	NA	NA	NA	10	25 *	10	25	50	Internal	No	No
DD2101	TEXTILE SCIENCE I	Regular	Compulsory		4	0	0	4	32	80	NA	20	NA	NA	NA	NA	100	-	No	No
DD2102	FUNDAMENTALS OF EMBROIDERY	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No
DD2103	FASHION DRAWING	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No
DD2104	KIDS GARMENT MANUFACTURING	Regular	Compulsory		2	6	0	8	16	40	NA	10	20	50 *	20	50	150	Internal	No	No

SC2107	TEXTILE CHEMISTRY	Regular	Compulsory		3	2	0	5	32	80	NA	20	10	25 *	10	25	150	Internal	No	No			
6	Sub Total								10	18	0	28	80	200		50	80	200	80	200	650		
LEVEL-2: Core Technology Courses B(Group B)																							
DD2105	HISTORY OF DESIGN	Regular	Optional		3	0	0	3	16	40	NA	10	NA	NA	NA	NA	50	-	No	No			
DD2106	FASHION STYLING	Regular	Optional		3	0	0	3	16	40	NA	10	NA	NA	NA	NA	50	-	No	No			
1	Sub Total								3	0	0	3	16	40		10	0	0	0	0	50		
Level Total								13	18	0	31	96	240		60	150	200	80	200	700			
LEVEL-3: Basic Technology Courses																							
DD3101	GRAPHIC DESIGNING	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No			
DD3102	APPAREL MANUFACTURING TECHNOLOGY	Regular	Compulsory		2	6	0	8	16	40	NA	10	40	100 *	20	50	200	Internal	No	No			
DD3103	INDUSTRY MANUFACTURING TECHNOLOGY	Regular	Compulsory	DD1102	4	4	0	8	32	80	NA	20	20	50 *	20	50	200	External	Yes	Yes			
DD3104	ILLUSTRATION TECHNIQUES	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No			
DD3105	ADVANCE ILLUSTRATION TECHNIQUES	Regular	Compulsory	DD2103	0	4	0	4	NA	NA	NA	NA	40	100 *	20	50	150	Internal	No	No			
DD3106	FASHION MERCHANDISING	Regular	Compulsory		4	0	0	4	32	80	NA	20	NA	NA	NA	NA	100	-	No	No			
DD3107	COLOR THEORY	Regular	Compulsory		4	0	0	4	32	80	NA	20	NA	NA	NA	NA	100	-	No	No			
DD3108	TEXTILE SCIENCE-II	Regular	Compulsory	DD2101	4	0	0	4	32	80	NA	20	NA	NA	NA	NA	100	-	No	No			
8	Level Total								18	22	0	40	144	360		90	140	350	100	250	1050		
LEVEL-4: Applied Technology Courses A(Auxiliary Courses)																							
AU4101	ENVIRONMENTAL SCIENCE	Regular	Compulsory		0	2	0	2	NA	NA	NA	NA	NA	NA	20	50	50	-	No	No			

AU4102	RENEWABLE ENERGY TECHNOLOGIES	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4103	ENGINEERING ECONOMICS	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4104	ETHICAL SOURCES AND SUSTAINIBILITY	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
AU4105	DIGITAL MARKETING	Regular	Optional		0	2	0	2	NA	NA	NA	NA	10	25 \$	10	25	50	Internal	No	No
2	Sub Total				2	2	0	4	16	40		10	0	0	20	50	100			

LEVEL-4: Applied Technology Courses B(Management Level Courses)

MA4101	ENTREPRENEURSHIP AND STARTUPS	Regular	Compulsory		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4102	INDUSTRIAL ORGANISATION AND MANAGEMENT	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4103	MATERIALS MANAGEMENT	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4104	DISASTER MANAGEMENT	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4105	INTRODUCTION TO E-COMMERCE	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
MA4106	INFORMATION MANAGEMENT	Regular	Optional		2	0	0	2	16	#40	NA	10	NA	NA	NA	NA	50	-	No	No
2	Sub Total				4	0	0	4	32	80		20	0	0	0	0	100			

LEVEL-4: Applied Technology Courses C(Programme Specific Courses (All Compulsory))

DD4101	INDUSTRY INPLANT TRAINING	Inplant Training	Compulsory	LEVEL 1 AND LEVEL 2 COURSES TERM GRANT	0	6	0	6	NA	NA	NA	NA	20	50 \$	20	50	100	External	No	No
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DD4102	PROJECT	Project Only	Compulsory	90 CREDITS AND LEVEL 1 PASSED	0	4	0	4	NA	NA	NA	NA	20	50 \$	20	50	100	External	Yes	No
DD4103	SEMINAR	Seminar Only	Compulsory	90 CREDITS AND LEVEL 1 PASSED	0	2	0	2	NA	NA	NA	NA	10	25 \$	10	25	50	Internal	Yes	No
DD4104	APPRECIATION OF INDIAN COSTUMES	Regular	Compulsory		4	2	0	6	32	80	NA	20	20	50 *	20	50	200	Internal	No	No
DD4105	APPRECIATION OF WORLD COSTUMES	Regular	Compulsory		4	2	0	6	32	80	NA	20	20	50 *	20	50	200	External	Yes	Yes
DD4106	PORTFOLIO DEVELOPMENT	Regular	Compulsory	DD3104	0	4	0	4	NA	NA	NA	NA	40	100 *	20	50	150	External	Yes	No
DD4107	DIGITAL DESIGN STUDIO	Regular	Compulsory		0	4	0	4	NA	NA	NA	NA	20	50 *	20	50	100	Internal	No	No
DD4108	SURFACE TECHNIQUES	Regular	Compulsory		4	4	0	8	20	80	NA	20	20	50 *	20	50	200	External	Yes	Yes
DD4109	DRAPING TECHNIQUES	Regular	Compulsory		3	6	0	9	16	40	NA	10	20	50 *	20	50	150	Internal	No	No
9	Sub Total				15	34	0	49	100	280		70	190	475	170	425	1250			
	Level Total				21	36	0	57	148	400		100	480	475	190	475	1450			
LEVEL-5: Diversified Courses																				
DD5101	RETAIL MERCHANDISING	Regular	Compulsory		4	2	0	6	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
DD5102	FASHION FORECASTING	Regular	Optional		4	2	0	6	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
DD5103	FASHION COMMUNICATION	Regular	Optional		4	2	0	6	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
DD5104	TECHNOLOGY OF KNIT	Regular	Optional		4	2	0	6	32	#80	NA	20	10	25 \$	10	25	150	External	Yes	Yes

DD5105	QUALITY STANDARDS IN APPAREL MANUFACTURING	Regular	Optional		4	2	0	6	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
DD5106	APPAREL MANAGEMENT	Regular	Optional		4	2	0	6	32	80	NA	20	10	25 \$	10	25	150	External	Yes	Yes
4	Level Total				16	8	0	24	128	320		80	40	100	40	100	600			
				Total Credits	82	96	2	180	612	1560		390	520	1300	500	1250	4500			

Legends : **L-** Lecture, **P-** Practical, **T-** Tutorial, **C-** Credits ,**ESE-**End Semester Examination,**PA-** Progressive Assessment (Test I,II/TermWork) , *****- Practical Exam, **\$-** Oral Exam, Each Lecture/Practical period is of one clock hour;

Details About 180OB-OB1 Structure

Total Credits	180
Total No. Courses	38+0(Non Credit Courses)
No of Courses with Theory Examination	24
No. of Courses with Practical/Oral Examination	27
No. of Courses without Theory Examination	15+0(Non Credit Courses)
Total Marks	4500
Marks For Class Declaration	1500
Theory Paper Marks for Class Declaration	700
Theory:Practical Ration as per Credits	46:54
Theory:Practical Ration as per Marks	43:57
Class Declaration Courses	10

GOVERNMENT POLYTECHNIC PUNE
DRESS DESIGNING AND GARMENT MANUFACTURING
180-OB PATH FOR FIRST YEAR AND SECOND YEAR

I SEM

SR.NO.	COURSE CODE	COURSE ABV.	COURSE NAME	PRE-REQUISITE	Credits				REMARK
					TH	PR	TUT	TOTAL	
1	HU1101	CMS-I	Communication Skill-I		2	0	1	3	
2	DD-2102	FOE	Fundamentals of Embroidery		0	4	0	4	
3	DD-1101	FOD	Fundamentals of Drawing		0	4	0	4	
4	DD-1102	MFT	Manufacturing Technology		4	4	0	8	EXEMPTION
5	DD-1103	BOD	Basics of Drafting		2	4	0	6	
6	DD-1104	TEG	Tool Engineering		4	0	0	4	
Subtotal					12	16	1	29	

II-SEM

SR.NO.	COURSE CODE		COURSE NAME	PRE-REQUISITE	Credits				REMARK
					TH	PR	TUT	TOTAL	
1	CM2102	FICT	Fundamental of ICT		1	2	0	3	EXEMPTION
2	DD-2101	TSC-I	Textile Science-I		4	0	0	4	
3	HU1102	CMS-II	Communication Skill-II	HU1101	2	0	1	3	
4	DD-2103	FDG	Fashion Drawing		0	4	0	4	
5	DD-2104	KGM	Kids Garment Manufacturing		2	6	0	8	
6	SC-2107	TXC	Textile Chemistry		3	2	0	5	
Subtotal					12	14	1	27	

III-SEM

SR.NO.	COURSE CODE		COURSE NAME	PRE-REQUISITE	Credits			
					TH	PR	TUT	TOTAL
1	DD-2105/DD2106	HOD/FST	History Of Design/Fashion Styling	OPTIONAL	3	0	0	3
2	DD-3101	GDG	Graphic Designing		0	4	0	4
3	DD-3102	AMT	Apparel Manufacturing Technology		2	6	0	8
4	DD-3104	ITQ	Illustration Techniques		0	4	0	4
5	DD-3107	CTH	Color Theory		4	0	0	4
6	DD-3108	TSC-II	Textile Science-II	DD-2101	4	0	0	4
7	AU 4101	ESCI	Environmental Science@		0	2	0	2
Subtotal					13	16	0	29

IV-SEM

SR.NO.	COURSE CODE		COURSE NAME	PRE-REQUISITE	Credits			
					TH	PR	TUT	TOTAL
1	DD-3105	AIT	Advanced Illustration Techniques	DD-2103	0	4	0	4
2	DD-3106	FMG	Fashion Merchandising		4	0	0	4
3	DD-4104	AIC	Appreciation of Indian Costumes		4	2	0	6
4	DD-4107	DDS	Digital Design Studio		0	4	0	4
5	DD-4108	STQ	Surface Techniques		4	4	0	8
6	DD-4109	DTQ	Draping Techniques		3	6	0	9
Subtotal					15	20	0	35

V-SEM

SR.NO.	COURSE CODE		COURSE NAME	PRE-REQUISITE	Credits			
					TH	PR	TUT	TOTAL
1	DD-3103	IMT	Industry Manufacturing Technology	DD-1102	4	4	0	8
2	DD-4101	INT	Industry Inplant Training	level 1&2 courses term grant	0	6	0	6
3	DD-4103	Seminar	Seminar	90 Credits & L1 passed	0	2	0	2
4	DD-4105	AWC	Appreciation of World Costumes		4	2	0	6
5	DD-5101	RMQ	Retail Merchandising @	COMPULSO	4	2	0	6
6	MA 4101	EN	Entrepreneurship & Startup@	COMPULSO	2	0	0	2
7	AU 4102	RET	Renewable Energy Technologies	ANY ONE	2	0	0	2
	AU 4103	EGE	Engineering Economics		2	0	0	2
	AU 4104	ESS	Ethical Sources and Sustainability		2	0	0	2
	AU4105	DMG	Digital Marketing		0	2	0	2
Subtotal					16	18	0	32

VI-SEM

SR.NO.	COURSE CODE		COURSE NAME	PRE-REQUISITE	Credits			
					TH	PR	TUT	TOTAL
1	DD-4102	Project	Project	90 Credits & L1 passed	0	4	0	4
2	DD-4106	PDT	Portfolio Development	DD-3104	0	4	0	4
3	MA 4102	IOM	Industrial Organization & Management	Any One	2	0	0	2
4	MA 4103	MMG	Materials Management		2	0	0	2
	MA 4104	DMG	Disaster Management		2	0	0	2
	MA 4105	IEC	Introduction to E-commerce		2	0	0	2
	MA 4106	IMG	Information Management	2	0	0	2	
5	DD-5102	FFG	Fashion Forecasting	Any Three	4	2	0	6
	DD-5103	FCM	Fashion Communication		4	2	0	6
	DD-5104	TOK	Technology of Knit		4	2	0	6
	DD-5105	QSAM	Quality Standards in Apparel Manufacturing		4	2	0	6
	DD-5106	AMG	Apparel Management		4	2	0	6
Subtotal					14	14	0	28

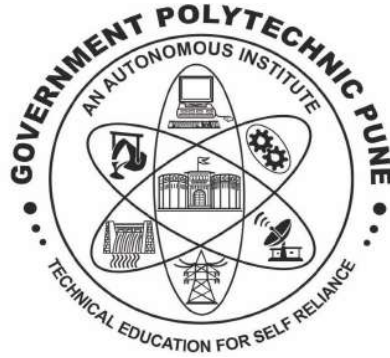

N.V.GONDANE

Department CDC In- Charge


A.S.XANPURE

Institute CDC In- Charge


V.G.TAMBE
Head Of Department



Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing

LEVEL-1 (Foundation Level Courses) (ALL COMPULSARY)

Sr. No.	Course Code	Course Name
1	DD-1101	Fundamentals of Drawing
2	DD-1102	Manufacturing Technology
3	DD-1103	Basics of Drafting
4	DD-1104	Tool Engineering
5	HU1101	Communication Skill-I
6	HU1102	Communication Skill-II

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Fundamentals of Drawing
Course Code	DD1101
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
L	T	P	C		ESE	PA	*ESE	PA	
00	00	04	04	Marks	--	--	50	50	100
				Exam Duration	--	--	--	--	

(*): *PE (Practical Examination)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides foundation for drawing, which enables the students to develop skills of illustration. Students can better organize and communicate the idea through drawing skill & combining color effectively. It develops proper execution of elements of drawing to make illustration successful.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Apply elements of design to create textile prints.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Select suitable material for drawing.
2. Demonstrate different types of lines and its shading techniques.
3. Apply textile print and types of repeat by using color media.
4. Use knowledge of forms and shape for creating design.
5. Apply the knowledge of design elements.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1.	Introduction to Drawing Material- Draw motifs and Render it using Dry Material (Pen, Pencil, Staddlers , Wax color, etc)	1,4	04
2.		Draw motifs and Render it using Wet Material (Ink, Water color, Poster Color, Marker, etc)	1,4	04
3.	2	Shading Techniques Assignment on Hatching (Pencils- HB,2B,4B,6B)	2,4	02
4.		Assignment on Smudging (Pencils- HB,2B,4B,6B)	2,4	02
5.		Assignment on Stripling (Pencils- HB,2B,4B,6B)	2,4	02
6.		Assignment on Scumbling (Pencils- HB,2B,4B,6B)	2.4	02
7.	3	Elements of Design Draw and Render Specimen Pattern -Line, Color, Texture, Form and Shape.	1,5	04
8.	4	Conversion of Shape Draw and Render Shape (Two each) Natural to Geometrical Natural to Abstract.	1,4	04
9.	5	Textile and Repeat Draw a motif and Repeat to create patterns-Drop, Brick, Triangle, Diamond, Cross and All Over.	1,3	06
10.		Assignment on different Textures –Emboss, Self print, Satin, Net, Fur, Corduroy, Velvet, etc.	1,3	06
11.		Draw and render Embroider pattern using any Ten Stitches.	1,5	04
12.		Illustrate Decorative details-Shirring, Quilting, Tucks, Studding and Patchwork.	1,5	06
13.	6	Library Formation- (Cutouts from -Magazine/News Paper/ Printouts) Collection of Necklines, Collars, Skirts, Trousers, Sleeves, Jackets. Develop Five basic design using reference.	4,5	08
14.		Draw Button and Buttonhole, Lacing, Zipper, Hook and Eye, Snaps, Loops, Velcro.	1,5	06
15.	All	Complete a micro project based on guidelines provided in Sr. No.11	1 to 5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Sketching (Basic)	20
b.	Developing Design	30
c.	Render with suitable Colors Combination.	30
d.	Page Composition and Presentation	10
e.	Neatness and completion of work on time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will user in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Drawing table and drawing board	1 -15
2	Stationery material-drawing sheets	1 -15
3.	Colouring material-poster color, staddlers, markers, etc	1 -2,7-15

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN - NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- Prepare 10 different textures using household things.
- Prepare Collection of trendy prints (Fabric sample/ Paper cutouts/Printout)
- Collect surface ornamentation different sample and study its effect with color.
- Prepare E-Journal for Textures.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the

development of the COs through classroom presentations (see implementation guideline for details).

- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO PROJECTS-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Library formation on color, hues and values collect samples of its implementation on various art objects (Pottery , Decorative tiles, Paisley Shawl ,etc.)
- b. Library formation on Types of line and sample of its implementation on various art objects.
- c. Collect/ Photo print - Dry Media material available in the Market.
- d. Collect/ Photo print - Wet Media material available in the Market.
- e. Prepare a visit report on Art Exhibition to observe application of various textures, prints, colors on different surface.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition,Year of publication	ISBN Number
1	The Fundamentals of drawing	Barrington barber, Publisher- Barnes and noble books-New York,2002,	ISBN-10: 1841932078 ISBN-13: 9781841932071
2	The Art of color and design	Matland Graves, Publisher- McGraw hill book US 1January1951	ISBN-10:0070241198 ISBN-13:978-0070241190
3	The Elements of Design: Rediscovering Colors, Textures, Forms and Shapes	Loan Oei, Publisher- Thames & Hudson ltd. London 4 March 2002	ISBN-10: 0500283397 ISBN-13: 978-0500283394





13. SOFTWARE/LEARNING WEBSITES

1. www.google.com
2. www.pinterest.com
3. Pencil shading technique- <http://youtu.be/iihNQyF-gg>
4. Creating Pattern using using software-<http://youtu.be/wOvpkfioveU>
5. Elements of Design- <https://www.youtube.com/watch?v=01ZoynsM7Vw>
6. Basic Design in abstract form- <https://www.youtube.com/watch?v=bJ9T0RF7E14>
7. Repetition of Print- <https://www.youtube.com/watch?v=iPeEnnw7634>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	--	--	--	1	--	2
CO2	3	--	--	--	--	--	2
CO3	3	--	--	--	1	--	--
CO4	3	--	--	--	--	--	2
CO5	3	--	--	--	1	--	2

	PSO1	PSO2
CO1	--	1
CO2	--	--
CO3	1	2
CO4	--	1
CO5	3	2

Sign:  Name: Mrs. P.V. Toshniwal (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zangpure (CDC)

Government Polytechnic,Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme Code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Manufacturing Technology
Course Code	DD1102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
				Theory		Practical		Total Marks	
L	T	P	C	ESE	PA	*ESE	PA		
04	00	04	08	Marks	80	20	50	50	200
				Exam Duration	3 Hrs	1 Hr	--	--	

(*): *PE (Practical Examination) Legends: L* - lecture, *T*- Tutorial, *P*- practical, *C*- Credits, *ESE*- End semester examination, *PA*- Progressive Assessment (Test I, II/Term Work), ***- Practical Exam, *\$*-Oral Exam,*#*-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course gives the fundamental knowledge of various parts of sewing machine and its uses to stitch various components of garments by solving trouble shooting problems in sewing to maintain quality of garment construction.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Stitch various components of a garment.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Rectify and solve simple problems of the sewing machines.
2. Compare Temporary Stitches and Permanent Stitches.
3. Construct different seams and finishing techniques on the machines.
4. Develop skills of gathers, pleats and tucks on the fabric.
5. Explain importance of lining and interlining.
6. Identify the types of opening and fasteners according to garments.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psycho motor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Demonstration of Parts and Mechanism of sewing machine.	1	04
2.	2	Solve the common machines problems and give the remedies.	1	04
3.	3	Prepare sample by using Temporary and Permanent stitches	2	08
4.	3	Prepare sample by using Various Seams.	3	08
5.	4	Prepare a sample by using tucks, pleats, gathers frills, shirring and dart finishes.	4	12
6.	5	Uses of support materials.	5	12
7.	6	Prepare sample by using necklines, plackets, and closures	6	12
8	All	Complete a micro project based on guidelines provided in serial no.11	1 To 6	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
1	Set up cutting and stitching materials.	20
2	Handling of tools and machines during performing practical	30
3	Follow Safety measures	20
4	Accuracy in performance	20
5	Submission in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Sewing Machines:- Single Needle lock stitch Machine Juki, 5-thread Over lock Machine, Cutting Tools - Scissors, Shears, Pinking Shears Sewing, Tailors Chalk Tracing paper, Carbon Paper, Tracing wheel. Hand and machine needles,	1 To 8
2	Cotton ,poplin fabric, sewing thread, needles, scissors	3 To 8
3	Various Closures, Paper canvas, press canvas.	3 To 8

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Fundamentals Of Sewing Techniques(10 hrs, 12 marks)	
1a. Identifying the types of sewing machines. 1b. Select appropriate sewing machine for different end uses. 1c. Describe the mechanism of different parts of sewing machine. 1d. Solve common machine problems. with remedies	1.1 Types of Sewing Machines. 1.1.1 Hand – Operated Sewing Machine. 1.1.2 Treadle Sewing Machine. 1.1.3 Electric Sewing Machine. 1.2 Parts of a Sewing Machine and their Functions. 1.3 Threading the Machine. 1.4 Common Machine Troubles and Remedies-Needle, Stitches / Seams, Thread, Machine, Fabric 1.5 Care of the Machine 1.5.1 Cleaning 1.5.2 Oiling
UNIT 2 Hand Sewing Techniques(10hrs, 14 marks)	
2a. Define Temporary stitches and permanent stitches. 2b. Explain types of basting.	2.1 Temporary Stitches 2.1.1 Even basting 2.1.2 Uneven basting 2.1.3 Diagonal basting 2.1.4 Slip basting 2.1.5 Pin basting 2.2 Permanent Stitches 2.2.1 Running stitch 2.2.2 Hemming 2.2.3. Over sewing
UNIT 3 Seams and Seam Finishes(12hrs, 14marks)	
3a. Classify the seams. 3b. Select the appropriate seam. 3c. Distinguish between plain seam and flat fell seam. 3d. Explain the uses of seams.	3.1 Definition of seams 3.2 Classification of Seams 3.3 Selection of Seams 3.4 Types of Seam and Uses 3.4.1 Plain Seam 3.4.2 Flat fell seam 3.4.3 French Seam 3.4.4 lapped seam 3.4.5 Bound seam 3.4.6 Counter seam 3.5 Seam Finishes 3.5.1 Pinked Finish 3.5.2 Double stitched Finish 3.5.3 Edge Stitched Finish
UNIT 4 Creating fullness in Garment(12hrs, 16marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
4a.Explain the types of tucks 4b.Classify type of tucks 4c.Differentiate between gathering and shirring	4.1 Tucks:- Pin tucks, Shell or scalloped tucks, Piped or corded tucks, Cross tucks 4.2 Pleats:- Knife pleats, Inverted pleat, Box Pleats 4.3 Gathers:- Gathering by Hand, Gathering by using elastic 4.4 Shirring or Gauging 4.5 Frills or Ruffles 4.6 Godets 4.7 Smocking 4.8 Darts:- Plain Dart, French Dart, Contour Dart
UNIT 5 Various Construction Details and support material.(08hrs, 08marks)	
5a.Identify support materials. 5b.Compare Lining and Interlining. 5c. Describe Uses Of support materials.	5.1 Lining 5.2 Interlining 5.3 Facing 5.4 Interfacing 5.5 underlining 5.6 purpose of supporting fabrics 5.6 Shoulder pads 5.7 Can- can 5.8 Cups silica 5.9 Canvas 5.10 Wadding
UNIT 6 Opening For Clothing and Closures(12hrs-,16marks)	
6a.Classify the plackets 6b.Explain the difference between a kurta placket and one piece placket. 6c.Describe different ways of finishing a neckline 6d.Define term Fasteners. 6e.Explain Functions of Fasteners.	6.1 Plackets:- Types Of Plackets, standards of good plackets. continuous Bound Placket, Two-piece placket, Kurta plackets, 6.2 Pockets and types 6.3 Necklines :- Different methods of finishing necklines 6.4 Selection of Fasteners 6.5 Buttons: Buttons with holes, Shank buttons 6.6 Button Holes 6.7 Hooks and Eyes 6.8 Button Loops 6.9 Snaps 6.10 Fancy Buttons

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Fundamentals Of Sewing Techniques	10	02	04	06	12
II	Hand Sewing Techniques	10	04	06	04	14
III	Seams and Seam Finishes	12	04	06	04	14
IV	Creating fullness in Garment	12	04	06	06	16
V	Various Construction Details and support material	08	02	02	04	08
VI	Opening For Clothing and Closures	12	04	06	06	16
Total		64	20	30	30	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities and prepare reports for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Student should maintain notebook where all the new words which are used for apparel construction will be noted with meanings.
- b. Prepare journals based on practical performed in laboratory.
- c. Prepare chart of given practical performed in laboratory.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

a. Compile a project of sample variation other than the above as self study.

- 1) Seams:
- Overedge Seams : 02 No. of sample
 - Corded Seams : 02 No. of sample
 - Mock French seam : 02 No. of sample
 - Serged Seam : 02 No. of sample

b .Compile a project of sample variation other than the above as self study.

- 2) Hems:
- Double Fold Hem : 03 No. of sample
 - Blind Hem : 03 No. of sample
 - Bound Hem : 03 No. of sample

c.Prepare report on types of thread and needles for suitable fabric.

d.Prepare report on types of zip and usage as per garment.

e.Collection of fasteners and label with names.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Production Terms	Debble Ann Gioello and Beverly Berke, Fairchild publications	ISBN:13-978-0870052002 ISBN:10-0870052004
2	Complete Guide to sewing	Readers Digest,	ISBN:13-978-0895770264 ISBN: 10-0895770261
3	The Encyclopedia of sewing Techniques	Wendy Gardiner Running	ISBN:10-0762416513 ISBN:13-978-0762416516

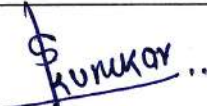



13. SOFTWARE/LEARNING WEBSITES

1. www.sewdeliicious.com
2. www.pocketmouse.co.uk
3. www.crftsy.com

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	2	-	-	-	3
CO2	1	-	-	2	-	-	2
CO3	2	-	1	2	1	-	2
CO4	1	2	-	3	1	2	2
CO5	2	-	-	3	-	-	2
CO6	2	-	3	1		-	3

	PSO1	PSO2
CO1	3	-
CO2	1	2
CO3	2	2
CO4	2	2
CO5	2	2
CO6	3	3

Sign:  Name: Ms. S.E. Kurzekar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Basics of Drafting
Course Code	DD1103
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks	
				Theory		Practical			
L	T	P	C	ESE	PA	*ESE	PA	100	
02	00	04	06	Marks	--	--	50		50
				Exam Duration	--	--	--		--

(*): PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course is to understand various working room terms, size chart to draft patterns in standard size used in Industry for garments manufacturing. It also develops psycho motor skills on dart manipulation with accurate measurement for various patterns.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop various garment patterns by manipulating standard sized draft used to manufacture garment.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Identify various working room terms.
2. Interpret a size chart for apparel pattern.
3. Use drafting skills in pattern making and develop skills for taking accurate body measurements
4. Apply the concept of dart manipulation.
5. Develop Patterns for various Garment Components.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Taking vertical, horizontal and Circumference Body Measurements	1	02
2.	1	Apply the standard measurement charts for various sizes.	1	02
3.	2	Measure Dress Forms using Industry Standards.	2	04
4.	3	Draft Close Fitting Bodice Block using standard measurement chart in 1:4 scale	3	08
5.	3	Draft Easy Fitting Bodice Block using standard measurement chart in 1:4scale	3	08
6.	3	Draft One Piece Sleeve Block using standard measurement chart in 1:4 scale	3	08
7.	3	Draft Skirt Block using standard measurement chart in 1:4 scale	3	08
8.	4	Draft collars, sleeves and skirts in 1:4 scale	4	10
9.	5	Manipulate the pattern using patternmaking techniques –slash and spread techniques and pivotal transfer techniques with single dart series and two dart series.(Any Two)	5	10
10.	All	Complete a micro project based on guidelines provided in serial no.11	1 to 5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
1	Set up drafting and cutting materials.	20
2	Handling of tools and equipment during performing practical.	30
3	Follow Safety measures	10
4	Accuracy in performance	30
5	Submission in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Measuring tools :-Scale, scale Triangle, Measuring Tape, French Tape Cutting Tools:- scissors, Pinking Shears Tracing Tools:- Tracing Paper, Graph Paper	1 to 10
2	Standard Dummies	1 to 3
3	General Tools:- Pencil, eraser, scale, brown paper Drafting Book	1 to 10

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1.The Workroom terms(Hrs- 08)	
1a. List name of various working room terminologies. 1b. Define terminology of patternmaking, pattern production, dart, fabric and drafting. 1c. Distinguish patternmaking, pattern production, dart, fabric and drafting terminology.	1.1 Patternmaking terms Pattern drafting ,Flat patternmaking, Basic pattern set, working Pattern 1.2 Pattern Production Terms First pattern, Production Pattern, Marker Maker 1.3 Dart Terminology Bust Point, Dart, Dart Legs, Dart Intake 1.4 Fabric Terminology Muslin, Grain, Lengthwise Grain, Crosswise Grain, off grain , On Grain, Selvedge, True Bias, Bias 1.5 Drafting Terminology Apex Of Dart, Balance Line, Final Pattern, Sloper, Seam Allowance, Seam Allowance, Seam Line,
UNIT 2 Form and Measurements(Hrs- 08)	
2a. Define symbol and landmark terms. 2b. Describe industrial Standard. 2c. Compare standard measurement chart.	2.1 Industry Standards 2.1.1 Landmark Terms 2.1.2 Symbol Keys 2.1.3 ASTM standards 2.1.4 Pattern Industry Standards 2.1.5 Department Store Standards 2.2 Measuring The Forms 2.2.1 Circumference Measurements 2.2.2 Horizontal Balance Line 2.2.3 Horizontal Measurements 2.2.4 Vertical Measurements 2.3 Standard Measurement Chart
UNIT 3 Introduction to Blocks(Hrs- 4)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
3a. Classify the basic block. 3b. Describe the basic blocks.	3.1 The Close Fitting Bodice Block 3.2 The Easy Fitting Bodice Block 3.3 One Piece Sleeve Block 3.4 Skirt Block
UNIT 4 Pattern making Principles(Hrs- 08)	
4a. Describe charting dart location. 4b .Explain manipulation techniques. 4c. Define Pattern Making terms.	4.1 Patternmaking Techniques 4.1.1 Introduction of Slash and Spread Techniques 4.1.2 Introduction of Pivotal Transfer Techniques 4.2 Patternmaking Terms 4.2.1 Pattern Plot 4.2.2 Pattern manipulation 4.2.3 Design Pattern 4.2.4 Pivotal Point 4.2.5 Basic Pattern 4.3 Charting Dart Location
UNIT 5 Components Of Garment(Hrs- 04)	
5a. Identify types of collars, sleeves, and skirts. 5b. Classify types of collars, sleeves, and skirts.	5.1 Sleeves:- Short Basic Sleeve, Petal Sleeve, Leg-o-Mutton sleeve, Puff sleeve 5.2 Collars:- Peter Pan collar, Sailor Collar, Mandarin Collar 5.3 Skirts:- circular Skirt(Umbrella skirt), Cowl Skirt, Skirt with inverted pleats.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities. Also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Prepare journals for documentation of drafting with various methods.
- b. Study of Innovative pattern from the Basic Pattern.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare 10 size (Full size) five piece basic sloper set on cardboard.
- b. Prepare 12 size (Full size) five piece basic sloper set on cardboard.
- c. Prepare chart of types of sleeve and label the names.
- d. Prepare chart of types of Collars and label the names.
- e. Prepare chart of types of Skirts and label the names.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Production Terms	Debble Ann Gioello and Beverly Berke, Fairchild publications	ISBN:13-978-0870052002 ISBN:10-0870052004
2	Metric pattern cutting for women's wear	Winifred Aldrich, Blackwell Edition	ISBN:978-1-4443-0929-4
3	Pattern making for fashion design	Helen Joseph Armstrong, Pearson	ISBN:0136069347 ISBN:978-0136069348
4	Metric pattern cutting for children's wear baby wear	Winifred Aldrich ,Blackwell Edition	ISBN:978-1-4051-8292-8





13. SOFTWARE/LEARNING WEBSITES

1. www.leenas.com
2. www.fashion-era.com/pattern_drafting
3. <https://www.pinterest.com/explore/pattern>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	2	3	-	2	3
CO2	1	3	1	3	-	3	3
CO3	2	2	2	2	-	-	3
CO4	2	1	2	3	-	1	2
CO5	2	1	2	3	-	-	2

	PSO1	PSO2
CO1	2	-
CO2	2	3
CO3	2	2
CO4	1	1
CO5	1	3

Sign:  Name: Ms. S.E. Kurzekar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Tool Engineering
Course Code	DD1104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C		ESE	PA	ESE	PA	
				Marks	80	20	--	--	100
04	00	00	04	Exam Duration	3 Hrs	1 Hr	--	--	

(*):*OE/POE (Oral Examination/Practical & Oral Examination -NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course gives the fundamental knowledge of tools, equipment's, machinery used in garment manufacturing industry. Also gives insight of sustainable packaging & material handling equipment's.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **To provide knowledge of different tools & machines required for garment manufacturing and understand the standards that maximize the speed as well as the quality of product by use of various industrial machines.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Identify the types of tools used for clothing construction.
2. Explain working principles of cutting machine.
3. Compare types of pressing tools used in garment industry.
4. Enlist benefits of industrial machines & attachments.
5. Describe types of packaging.
6. Explain the use of material handling equipment's.

5. **SUGGESTED PRACTICALS/ EXERCISES**
NA
6. **MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED**
NA
7. **THEORY COMPONENTS**

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Tools for Clothing Construction (08hrs, 12mark)	
1a.Enlist measuring equipment's 1b.State uses of pinning types equipment's 1c.State uses of Marking equipment's. 1.4. Importance of Storage & Packing equipment's. 1d.Classify General equipment's in Apparel construction.	Tools for Clothing Construction 1.1 Measuring Equipment's - Measuring Tape, Seam Gauge, Yardstick or Meter Stick, Transparent Ruler, and Skirt Marker etc. 1.2 Pinning Equipment's – Silk Pins, Ball Point Pins, T – Pins Cushion etc. 1.3 Marking Equipment – Tracing Wheel, Dressmakers Tracing Paper and Tailors Chalk etc. 1.4 Storage Equipment's – Boxed goods, Hanging good. 1.5Packaging Equipment's – Bagging, Boxing 1.6 General Tools – Sewing Threads, Dummy, Mirror, Hangers, drill marker, knotcher etc.
UNIT 2.Cutting Technology (12hrs, 16marks)	
2a.Describe manual cutting equipment's. 2b.Enlist principles of semi-automatic machine. 2c.Explain functions of fully automatic machines.	2.1 Manual Cutting Equipment's 2.1.1Cutting Equipment's-Shears & Scissors, 2.1.2 Dress Makers Shears, 2.1.3Scalloping Shears, and Cutting Table etc. 2.2Principals and working of Semi Automatic Cutting Equipment's 2.2.1 Powered scissors 2.2.2 Straight Knife cutting machine 2.2.3 Round Knife cutting machine 2.2.4 Bend Knife cutting machine 2.2.5 Die cutter 2.2.6 Notcher Machine 2.2.7 Drill Machine 2.3 Principals and working of fully Automatic Cutting Equipment's 2.3.1 Laser Cutting Machine.
UNIT 3 Pressing Technology (14hrs, 14marks)	
3a.Define Types of Pressing equipment's 3b.Describe Pressing equipment's 3c.Explain working of industrial pressing equipment's	3.1 Hand pressing equipment's 3.1.1Charcoal Iron 3.1.2 Dry Iron 3.2Automatic Pressing equipment's 3.2.1 Electric Steam 3.2.2 Steam Press/ Buck press 3.2.3 Trouser pressing 3.2.4 Steam Dolly 3.2.5 Tunnel Finishing

	<p>3.2.6 Crease machine 3.2.7 Pleating iron 3.2.8 Permanent Press 3.2.9 Garment steamer</p>
UNIT 4 Sewing Technology (14hrs,18marks)	
<p>4a.Identity& classify sewing machine beds. 4b.Enlist use of types of pressure foot and gauge. 4c.Explain working principles of Industrial machines.</p>	<p>4.1. Working type of Beds of sewing machine 4.2 Attachments for Sewing Machine- 4.2.1 Types of Pressure Foot – Roller foot, Binding foot, Zipper foot, Teflon coated foot, Cording Foot, Shirring foot, Gathering foot. 4.2.2 Types of Gauge – Seam gauge, Quality guide bar & guides button holes, gauge, Spacing gauge 4.3 Types of industrial Machines 4.3.1 Lock stitch machine & its parts 4.3.2.Over lock machine 4.3.2 Button fixing machine 4.3.3 Button hole machine 4.3.4 Blind stitch machine 4.3.4 Embroidery machine 4.3.5 Flat lock machine 4.3.6 Bar Tack 4.3.7 Fusing Machine</p>
UNIT 5 Packaging (10hrs, 12marks)	
<p>5a.Define packaging and its purpose. 5b.Differentiate types of packaging 5c.Identify packaging materials. 5d.Functions of cartoon packaging 5e. Enlist importance of sustainable packaging</p>	<p>5.1 Definition of packaging, purpose of packaging 5.2 Benefits of Packaging 5.3 Types of packaging Advantages & limitations 5.3.1 Stand up pack: Shirt 5.3.2 Flat pack: Sport wear/Shirt/Trouser 5.3.3 Hanger pack: Blazer, Coats, Pants 5.3.4 Semi stand up pack for Shirt 5.3.5 Half fold pack for Pant 5.3.6 Dead man pack 5.8 Sustainable Packaging options 5.9.Functions of Packaging 5.10 Flowchart of Packaging 5.11. Garment packaging Material</p>
UNIT 6 Material Handling Equipment's (06hrs,08marks)	
<p>6a.Acknowledge importance of material handling 6b.Identify types of material handling 6c.Describe material handling equipment's</p>	<p>6. Types of Material handling equipment are used in apparel industry. 6.1 Material handling system in apparel industry- 6.1.2 Cutting Department- Trolley, Bakers Trolley ,plastic trays and trolleys ,fabric bags, Racks 6.2 Material handling equipment for stitching department 6.2.1 Conventional Table, side table, trolley, plastic crates & bins 6.2.2 Conveyors, electric tugs, cranes ,industrial trucks, positioning equipment's, unit load equipment, storage equipment,</p>

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Tools for Clothing Construction	08	06	04	02	12
II	Cutting Technology	12	06	06	04	16
III	Pressing Technology	14	02	08	04	14
IV	Sewing Technology	14	04	08	06	18
V	Packaging	10	04	08	--	12
VI	Material handling equipment's	06	04	04	--	08
Total		64	26	38	16	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare charts of tools used for pattern making.
- Search information about costs and specifications of sewing machines and its parts.
- Collect information of sustainable packaging methods & materials.
- Prepare a list of automated machines used for material handling.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Use Flash/Animations to explain various components and its application..
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Complete Guide to Sewing	Reader's Digest, London Blackwell	ISBN-9780276001826
2	Clothing Manufacturing	Gerry Coocklin, Focal press N.Y	ISBN -9780632058464
3	Encyclopedia of Sewing Techniques	Jan Eaten London, Crange Books	ISBN -978-0812058154
4	Clothing Decisions	Anita Webb	ISBN 978-0026680202
6	Garment Technology for Fashion Designers	Gerry Cooklin ,Blackwell	ISBN -9780632047758





13. SOFTWARE/LEARNING WEBSITES

- 1.<https://www.objectivequiz.com/objective-questions/tools-and-machines/sewing-machine>
- 2.<https://www.vskills.in/practice/apparel-pattern-maker-mock-test>
- 3.<https://www.objectivequiz.com/objective-questions/tools-and-machines/sewing-machine/2>
- 4.<https://www.vskills.in/practice/>
- 5.<https://garmentsmerchandising.com/fabric-cutting-machines-apparel/>
- 6.https://reviewgamezone.com/mc/candidate/test/?test_id=10569&title=Sewing%20Tools%20%20Notions
- 7.<https://quizizz.com/admin/quiz/565472e52d3646a956c64917/parts-of-the-sewing-machine>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	03	-	-	02	-	-	-
CO2	02	-	-	-	-	-	-
CO3	03	-	02	02	01	-	01
CO4	02	01	02	02	-	-	01
CO5	02	-	02	-	-	-	01
CO6	03	-	-	02	01	-	01

	PSO1	PSO2
CO1	2	-
CO2	1	1
CO3	2	-
CO4	-	1
CO5	1	-
CO6	2	-

Sign:  Name: Mrs. C. M. Ambikar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in CE/EE/ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/15/16/ 17/18/19/21/22/23/24/26
Name of the Course	Communication Skills -I
Course Code	HU1101
Prerequisite	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
L	T	P	C	Theory		Practical		Total Marks	
				ESE	PA	SESE	PA		
02	01	00	03	Marks	40	10	25	25	100
				Exam Duration	2 Hrs	1/2Hr	--	--	--

Legends: L- Lecture, P- Practical, T- Tutorial, C- Credits, ESE-End Semester Examination, PA- Progressive Assessment (Test I, II/ TermWork), *- Practical Exam, \$- Oral Exam, #- Online Examination. Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Communication skills is a natural and necessary part of an organizational life. The goal of communication skills course is to produce civic-minded and competent communicators. At the end, students will acquire proficiency in oral and written methods along with nonverbal communication.

3. COMPETENCY

The aim of this course is to attend following industry competency through various teaching learning experiences:

- **To develop English Language Speaking Abilities, enrich fluency, and to make students get acquainted with basics of communication skills.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Communicate effectively to overcome barriers.
2. Apply Nonverbal codes for effective communication.
3. Apply Learning Skills.
4. Interpret information to present orally.
5. Use Language lab for improving listening and speaking abilities

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approx. Hrs. required
1	1	Introduction to Communication Cycle	1	1
2	1	Analyze Communication Events.	1	1
3	2	Collect Different Pictures Depicting Body actions.	2	2
4	2	Utilize Signs, Symbols & color codes.	2	1
5	3	*Loud Reading of Given Paragraph.	3	2
6	3	*Utilize Techniques of Listening with the help of lingua phone	3	2
7	4	Topic Writing on Current Issues	4	2
8	4	Comprehending Information and extempore it	4	1
9	5	Practice Vocabulary I (Identify words from various Technical Jargons.)	5	2
10	5	Practice Vocabulary II(Homophones/abbreviations/Synonyms/antonyms)	5	2
11	1 to 5	Complete the Micro-project as per the guidelines in point no 11 -compulsory.	1 to 5	2
		Total Hrs		16

*Perform assignment no.5 or 6.

Sr. No.	Performance Indicators	Weightage in %
a.	Arrangement of available equipment / test rig or model	-
b.	Setting and operation	-
c.	Safety measures	-
d.	Observations and Recording	40
e.	Interpretation of result and Conclusion	-
f.	Answer to sample questions	30
g.	Submission of report in time	30
	Total	100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr. No.	Equipment Name with Broad Specifications	Experiment Sr. No
1	Language Lab	5,6

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit 1 : Introduction and Principles of Communication (08hrs, 12 marks)	
1a. Interpret different communication skills 1b. Define elements of communication 1c. Describe process of communication 1d. Identify barriers for finding remedies 1e. Interpret principles of communication	1.1 Introduction to communication 1.2 Definition and elements of communication 1.3 Process of communication 1.4 Barriers to communication and remedies to overcome it. 1.5 Principles of communication
Unit 2 : Nonverbal Skills (06hrs, 10marks)	
2a. Differentiate graphic communication 2b. Use different nonverbal codes 2c. Interpret various graphic forms.	2.1 Graphic communication 2.2 Nonverbal codes [Kinesics, Proxemics, Chronemics, Haptics 2.3 Vocalics Dress and Appearance] 2.4 Reading graphic forms [Bar graph Pie chart]
Unit 3 : Learning Skills (06hrs, 04 marks)	
3a. Recall listened information 3b. Apply oral skills 3c. Perceives various fonts & use it 3d. Compose sentences & paragraphs	3.1 Listening skills 3.2 Speaking skills 3.3 Reading skills 3.4 Writing Skills
Unit 4 Comprehension (06hrs, 06marks)	
4a. Improve writing techniques 4b. Interpret information 4c. Summarize to extempore	4.1 Topic Writing (current issues) 4.2 Comprehend various information 4.3 Extempore some current Activities
Unit 5 Language Skills (06hrs, 08marks)	
5a. Use phonetic signs and symbols for pronunciation 5b. Practice Pronunciation using lingua-phone 5c. Utilize listening skills 5d. Classify jargon wise vocabulary for improvement	5.1 Phonetics (Practice of pronunciation) 5.2 Listening skills 5.3 Use of lingua-phone (language lab) 5.4 Vocabulary building

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction and principles of communication	08	04	06	02	12
II	Nonverbal Communication	06	02	02	06	10
III	Comprehension	06	00	02	04	06
IV	Learning Skills	06	00	00	04	04
V	Language skills	06	-	02	06	08
Total		32	06	12	22	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare journal based on practical performed in Ling phone laboratory. Journal consists of drawing, observations, required equipment's, date of performance with teacher signature.
- Collection of Paper cuttings from magazines, Newspapers, periodicals etc
- Encyclopedia

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with power plant system and equipment.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to them. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application-based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs and integrate PrOs, UOs and ADOs (Affective Domain Outcomes). Each student will have to maintain a dated work diary of individual contributions to the project work and give a seminar presentation before submission. The student should submit a micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. The concerned faculty could add similar micro-projects:

- a. Student must collect pictures depicting various body actions.
- b. Students should utilize signs, symbols, signals and color code to represent traffic signals.
- c. Student should prepare a table of Jargon wise vocabulary of various technical domains.
- d. Student should extempore on a given topic.
- e. Student should collect abbreviations related to corporate world.

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title	Author	Publisher, Edition and Year of publication, ISBN Number
1	Communication skills	Joyeeta Bhattacharya	Macmillan Co.
2	Written communication in English	Sarah Freeman	Orient Longman Ltd.
3	Developing Communication skills	Krishna Mohan and Meera Banerji	Macmillan India Ltd.





13. SOFTWARE/LEARNING WEBSITES

1. www.talkenglish.com
2. Edutech.com
3. Swayam.com
4. www.mooc.org

14. PO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	1	-	-	1
CO2	3	-	-	-	1	-	1
CO3	3	1	-	-	1	1	1
CO4	3	-	-	-	1	-	1
CO5	2	-	-	-	1	-	1

	PSO1	PSO2
CO1	-	-
CO2	-	1
CO3	-	-
CO4	-	1
CO5	-	1

Sign:  Name: Mrs. S. C. Patil (Course Expert)	Sign:  Name : Mrs.N.S.Kadam (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Shri. A. S. Zanpure. (CDC in charge)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in ET/CE/EE//ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/15/16/17/18/19/21/22/23/24/26
Name of Course	Communication Skills -II
Course Code	HU1102
Prerequisite	HU1101 Commnication Skills- I
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory		Practical		Total Marks
L	T	P	C	ESE	PA	ESE	PA	100
02	01	00	03	Marks	40	10	--	
				Exam Duration	2 Hrs	1/2Hr	---	--

Legends: L- Lecture, P- Practical, T- Tutorial, C- Credits, ESE-End Semester Examination, PA- Progressive Assessment (Test I, II/ Term Work), *- Practical Exam, \$- Oral Exam, #- Online Examination. Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Communication skills course is used in all spheres of human life – personal, social and professional. Students will get fair knowledge of communication skills to handle the future jobs in industry. This course includes the practice of oral and written communication, correspond with others and give presentations.

3. COMPETENCY

The aim of this course is to attend following industry competency through various teaching learning experiences:

- **To build confidence in written correspondence required in technical fields.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Prepare various speeches for presentation
2. Write application for Business purposes.
3. Write various technical reports.
4. Write business letters.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Learning Outcomes in Psychomotor Domain)	CO No.	Approx. Hrs. required
1	1	Practice to write various speeches like vote of thanks, guest introduction etc.	1	2
2	1	Write job application, resume, leave application	3	2
3 *	2	Draft a project report to start a new industry (Or to write down the market survey report)	2	2
4	3	Prepare industrial visit report after visit	3	1
5	3	Write a placing an order letter, complaint letter	3	2
6	4	Write a joining letter	4	1
7 *	3	Draft a notice, circular and memorandum	3	2
8	3	Write a fall in production report	3	1
9	3	Work progress report	3	1
10	4	Description of devices	4	2
11	All	Complete a micro project based on guidelines provided in Sr. No. 11	All	2
Total				16

* Perform Pr.No. 3 or 7

Sr.No.	Performance Indicators	Weightage in %
a.	Arrangement of available equipment / test rig or model	-
b.	Setting and operation	-
c.	Safety measures	-
d.	Observations and Recording	50
e.	Interpretation of result and Conclusion	20
f.	Answer to sample questions	20
g.	Submission of report in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit 1 Writing Speeches (08hrs, 10 marks)	
1a. Give in own words the introduction of guest. 1b. Express feelings in own words to welcome 1c. Express feelings in own words for Farewell Speech 1d . Give in own words the vote of thanks	1.1 Introduction of guest 1.2 Welcome speech 1.3 Farewell speech 1.4 Vote of thanks
Unit 2 Writing Applications (06hrs, 08 marks)	
2a. Write official correspondence for Job 2b. Application with Resume 2c. Write application for leave. 2d. Write application for getting NOC from corporation. 2e. Students can write various applications	2.1 Job application with resume 2.2 Leave application 2.3 Miscellaneous applications
Unit 3 Writing Reports and Notices (10hrs, 10 marks)	
3a. Students can write Industrial visit report after visit. 3b. Students can write survey report. 3c. Students can write Fall in production report. 3d. Students can draft circular and other notices. 3e. Students can draft Memos.	3.1 Visit report 3.2 Survey report (feasibility report) 3.3 Fall in production report 3.4 Circular/notice 3.5 Memos
Unit 4 Drafting Business Letters (08hrs, 12 marks)	
4a. Students can write Enquiry Letter. 4b. Students can write Placing an order letter. 4c. Student can write Complaint Letter. 4d. Students can write Appointment Letter. 4e. Students can draft Joining Letter.	4.1 Enquiry letter 4.2 Placing an order letter 4.3 Complaint letter 4.4 Appointment letter 4.5 Joining letter

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Writing speeches	08	2	2	6	10
II	Writing applications	06	2	2	4	08
III	Writing Reports and Notices	10	2	2	6	10
IV	Business letters	08	2	4	6	12
Total		32	8	10	22	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Prepare journal based on practical performed in Lingua- phone- laboratory. Journal consists of drawing, observations, required equipment's, date of performance with teacher signature.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with power plant system and equipments.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and
- h. Teacher should ask the students to go through instruction and technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to them. In special situations where groups have to be formed for micro-projects, the number of students in the group should *not exceed three*.

The micro-project could be industry application-based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs and integrate PrOs, UOs and ADOs (Affective Domain Outcomes). Each student will have to maintain a dated work diary of individual contributions to the project work and give a seminar presentation before submission. The student should submit a micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. The concerned faculty could add similar micro-projects:

1. Practice to write various speeches and give speech on any of it.
2. Draft personal Resume/ Biodata/CV
3. For drafting project report to start a new industry student should have a market survey and search other accepts to be and an entrepreneur
4. Prepare an industrial visit report after visiting an industry.
5. Describe various technical devices and prepare a PPT on any one of it.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author	Publisher, Edition and Year of publication, ISBN Number
1	Communication skills	Joyeeta Bhattacharya	Macmillan Co.
2	Written communication in English	Sarah Freeman	Orient Longman Ltd. ISBN- 13 : 978-8125004264
3	Developing Communication skills	Krishna Mohan and Meera Banerji	Macmillan India Ltd. 0333929195 9780333929193





13. SOFTWARE/LEARNING WEBSITES

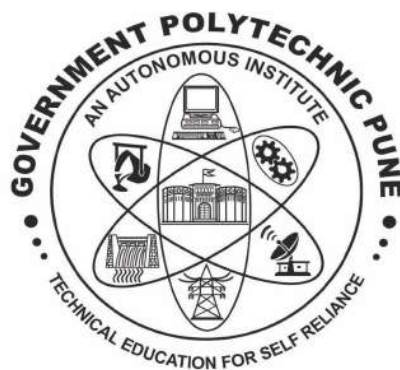
1. www.talkenglish.com
2. Edutech.com
3. www.makeuseof.com
4. www.mooc.org

14. PO –PSO - CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	-	1	3	1	2
CO2	3	1	-	-	2	1	3
CO3	3	3	-	1	2	1	3
CO4	3	2	-	1	2	-	3

	PSO1	PSO2
CO1	-	-
CO2	1	1
CO3	1	1
CO4	1	1

Sign:  Name: Smt. S.C.Patil (Course Expert)	Sign:  Name : Mrs.N.S.Kadam (Head of Department)
Sign:  Name: Mr. V. G.Tambe (Program Head of Department)	Sign:  Name: Shri. A. S. Zanpure. (CDC in charge)



Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing

LEVEL-2(Core Technology Courses)
Group A (ALL COMPULSARY)

Sr. No.	Course Code	Course Name
1	CM2102	Fundamental of ICT
2	DD-2101	Textile Science-I
3	DD-2102	Fundamentals of embroidery
4	DD-2103	Fashion Drawing
5	DD-2104	Kids Garment Manufacturing
6	SC-2107	Textile Chemistry

Group B

Sr. No.	Course Code	Course Name
1	DD-2105	History Of Design
2	DD-2106	Fashion Styling

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in CE/EE/ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/21/22/23/24/26
Name of Course	Fundamentals of ICT
Course Code	CM2102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme			
					Theory		Practical	
L	T	P	C	ESE	PA	* ESE	PA	50
				Marks	--	--	25	
01	00	02	03	Exam Duration	--	--	--	--

(*):PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In any typical business setup, in order to carry out routine tasks related to create business documents, perform data analysis and its graphical representations and making electronic slide show presentations, the student need to learn various softwares as office automation tools like word processing applications, spreadsheets and presentation tools. They also need to use these tools for making their project reports and presentations. The objective of Information and Communication Technology course is to develop the basic competency in students for using these office automation tools to accomplish the job.

3. COMPETENCY

The aim of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- **Use Computers for electronic documentation, data analysis, slide presentations and use of various internet services.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Connect Computer System and its peripherals.
2. Prepare document using word processing tool.
3. Create and design spreadsheets and data tables.
4. Prepare professional presentations.
5. Use various web services.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No	Unit No.	Practical Exercises (Learning Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	i) Identify various Input/output devices, connections and peripherals of computer system ii) Demonstration of Front Panel View ,Rear Panel View, I/O Serial and Parallel Ports iii) Demonstration of opening and closing of the Computer	1	1
2		i) Connections inside CPU and its demonstration ii) Setting up the Cabinet. iii) Identification and Demonstration of different slots on motherboard. Mounting and Un mounting of RAM, Graphics card and Network card	1	1
3		i) Connecting various I/O Devices such as Mouse, Keyboards, Monitors, Printers, Web Cameras, Speakers, Scanners and External Hard disks etc. ii) Demonstration of RJ45 connector and its use and Bluetooth as an external interface	1	2
4		Functions and working of Secondary Storage devices i) Study of various types of Secondary Storage devices. ii) BIOS Settings for Primary and secondary Memory. iii) Installation, Configuration and Setting of Hard Disks and working of CD-ROM/DVD-ROM/ DVD-Combo/ DVD-Writer (Internal and External).	1	1
5		Execution of basic commands in command window: Ex: dir, md, copy, cd, move, rmdir, rd etc.	1	1
6		Various operations on Window based operating system part I: i) Windows Operations: Minimizing, Maximizing, Resizing. ii) Managing files and folders: Create, copy, rename, delete, move file and folder, Creating shortcuts.	1	1
7		Various operations on Window based operating system part II: i) Creating and Removing/Deleting User Accounts. ii) Using Add /Remove Programs and Hardware Utility. iii) Adding Fonts and Viewing Computer Configuration iv) Desktop settings: Display properties, Time and Date setting, Screen Saver , Appearance	1	2
8		i) Create, edit and save document : apply formatting features on the text - line, paragraph ii) Use bullets, numbering, page formatting	2	2

		iii) Insert and edit images and shapes, sizing, cropping, color, background, group/ungroup		
9	2	i) Insert and apply various table formatting features on it. ii) Use mail merge with options.	2	1
10		Apply page layout features i) Themes, page background, paragraph, page setup ii) Create multicolumn page iii) Use different options to print the documents	2	2
11	3	Create, open and edit worksheet i) Enter data and format it, adjust row height and column width ii) Insert and delete cells, rows and columns iii) Apply wrap text, orientation feature on cell.	3	2
12		i) Insert formulas, "IF" conditions, functions and named ranges in worksheet. ii) Apply data Sort Filter and Data Validation features.	3	3
13		Create charts to apply various chart options.	3	2
14		Apply Page setup and print options for worksheet to print the worksheet.	3	1
15		Perform following in GUI based database software using GUI like MS-Access i) Create Database ii) Create tables and assign primary key. iii) Modify the table structure-add column, change the data type of column, delete the column from table. iv) Insert, update and delete the record from table. v) Retrieve data from the table according to condition given.	3	2
16	4	i) Create slide presentation ii) Apply design themes to the given presentation iii) Add new slides and insert pictures/images, shapes, apply animation effects to the text and slides. iv) Add tables and charts in the slides. v) Run slide presentation in different modes and Print it.	4	2
17	5	Configure Internet connection	5	1
18		Use internet for different web services.	5	2
19		Configure browser settings and use browsers.	5	1
20	All	Micro-project (Refer point 11 for micro project list)	All COs	2
		Total		32

Sr.No.	Performance Indicators	Weightage in %
a.	Use of Appropriate tool to solve the problem (Process)	40
b.	Quality of output achieved (Product)	30
c.	Complete the practical in stipulated time	10
d.	Observations and Recording	10
e.	Answer to sample questions	10
	Total	100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practicals, as well as aid to procure equipment by authorities concerned.

Sr. No.	Major Equipment/ Instruments Required	Experiment. No.
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), Graphics cards, sound cards, internal hard disk drives, DVD drive, Network interface card, Mouse, Keyboard, Monitors, Printers, Web Cameras, Speakers, Scanners and External Hard disks etc.	1 to 7
2	Laser printer	1,14,16
3	Hard Disks, CD-ROM/DVD-ROM/ DVD-Combo/ DVD-Writer (Internal and External).	3,4
4	Hubs, Switches, Modems.	18,19
5	Any operating system.	5 to 20
6	Any Office Software.	8,9,10, 11, 12, 13, 15,16,17
7	Any browser.	18,19,20

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. INTRODUCTION TO COMPUTER SYSTEM (Hrs- 04)	
<p>1a. Explain the given block diagram of computer system.</p> <p>1b. Classify the given types of software.</p> <p>1c. Explain characteristics of the specified type of network.</p> <p>1d. Describe Procedure to manage file/folders.</p> <p>1e. Describe application of the specified type of network connecting device.</p>	<p>1.1 Basics of Computer System: Overview of Hardware and Software ,block diagram of Computer System, Input /Output unit, CPU, Control unit, Arithmetic logic unit(ALU), Memory Unit</p> <p>1.2 Internal Components: Processor, Motherboards, random access memory(RAM), read-only memory(ROM), Video cards, Sound cards and internal hard disk drives</p> <p>1.3 External Devices: Types of Input/ Output Devices, Types of monitors, Keyboards, Mouse, Printers: Dot Matrix, Inkjet and LaserJet, Plotter and scanner, external storage devices CD/DVD , Hard disk and pen drive</p> <p>1.4 Basic Commands in command window: Ex: dir, md, copy, cd, move, rmdir, rd etc.</p> <p>1.5 Application Software: Word processing , Spreadsheet, database management systems, Control software, measuring software, photo editing software , video editing software, graphics manipulation software system software compilers, linkers, device drivers, operating systems and utilities</p> <p>1.6 Network environments: Network interface cards, hubs, switches, routers and modems, concept of LAN, MAN, WAN, WLAN, Wi-Fi and Bluetooth</p> <p>1.7 Working With Operating Systems: Create and manage file and folders, Copy a file, renaming and deleting files and folders, searching files and folders, application installation , creating shortcut of application on the desktop</p>
UNIT 2. WORD PROCESSING (Hrs- 03)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
<p>2a. Write steps to create the given text document.</p> <p>2b. Explain the specified feature for document editing.</p> <p>2c. Explain the given page setup features of a document.</p> <p>2d. Write the specified table formatting feature..</p>	<p>2.1 Word Processing: Overview of Word processor, Basics of Font type, size, color, Effects like Bold, italic, underline, subscript and superscript, Case changing options, Previewing a document, Saving a document, Closing a document and exiting application.</p> <p>2.2 Editing a Document: Navigate through a document, Scroll through text, Insert and delete text, Select text, Undo and redo commands, Use drag and drop to move text, Copy, cut and paste, Use the clipboard, Clear formatting, Format and align text, Formatting Paragraphs, Line and paragraph spacing, using FIND and REPLACE, Setting line spacing ,add bullet and numbers in lists, add borders and shading, document views, Page settings and margins, Spelling and Grammatical checks</p> <p>2.3 Changing the Layout of a Document: Adjust page margins, Change page orientation, Create headers and footers, Set and change indentations, Insert and clear tabs</p> <p>2.4 Inserting Elements to Word Documents: Insert and delete a page break, Insert page numbers, Insert the date and time, Insert special characters(symbols),Insert a picture from a file, Resize and reposition a picture</p> <p>2.5 Working with Tables: Insert a table, Convert a table to text, Navigate and select text in a table, Resize table cells, Align text in a table, Format a table, Insert and delete columns and rows, Borders and shading, Repeat table headings on subsequent pages, Merge and split cells.</p> <p>2.6 Working with Columned Layouts and Section Breaks: Add Columns, Section breaks, Creating columns, Newsletter style columns, Changing part of a document layout or formatting, Remove section break, Add columns to remainder of a document, Column widths, Adjust column spacing, Insert manual column breaks</p>
UNIT 3.SPREADSHEETS AND DATABASE(Hrs- 04)	
<p>3a. Write steps to create the given spreadsheet.</p> <p>3b. Explain the specified formatting feature of a worksheet.</p> <p>3c. Write steps to insert formula and functions in the given worksheet.</p> <p>3d. Write steps to create charts for the specified data set.</p> <p>3e. Explain steps to perform advance operation on the given dataset</p>	<p>3.1 Working with Spreadsheets: Overview of workbook and worksheet, Create Worksheet Entering sample data, Save, Copy Worksheet, Delete Worksheet, and Open & Close Workbook.</p> <p>3.2 Editing Worksheet: Insert and select data, adjust row height and column width, delete, move data, insert rows and columns, Copy and Paste, Find and Replace, Spell Check, Zoom In-Out, Special Symbols, Insert Comments, Add Text Box, Undo Changes,- Freeze Panes, hiding/un hiding rows and columns.</p> <p>3.3 Formatting Cells and sheet: Setting Cell Type, Setting Fonts, Text options, Rotate Cells, Setting Colors, Text Alignments, Merge and Wrap, apply Borders and Shades, Sheet Options, Adjust Margins, Page Orientation, Header and Footer, Insert Page Breaks, Set Background.</p> <p>3.4 Working with Formula: Creating Formulas, Copying Formulas, Common spreadsheet Functions such as sum, average, min, max, date, In, And, or, mathematical functions such as sqrt, power, applying conditions using IF.</p> <p>3.5 Working with Charts: Introduction to charts, overview of</p>

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	<p>different types of charts, Bar, Pie, Line charts, creating and editing charts. Using chart options: chart title, axis title, legend, data labels, Axes, grid lines, moving chart in a separate sheet.</p> <p>3.6 Advanced Operations: Conditional Formatting, Data Filtering, Data Sorting, Using Ranges, Data Validation, Adding Graphics, Printing Worksheets, print area, margins, header, footer and other page setup options</p> <p>3.7 Introduction to Database Management System: Meaning of Data, Database, DBMS, GUI based database software Creating tables and assign primary key, Modifying the table structure-add column, change the data type of column, and delete the column from table. And Insert, update and delete the record from table.</p>
UNIT 4. PRESENTATION TOOL (Hrs- 03)	
<p>4a. Write the steps to create the specified slide presentation.</p> <p>4b. Write the steps to insert multiple media in the given presentation.</p> <p>4c. Write steps to apply table features in the given presentation</p> <p>4d. Write steps to manage charts in the given presentation</p>	<p>4.1 Creating a Presentation: Outline of an effective presentation, Identify the elements of the User Interface, Starting a New Presentation Files, Creating a Basic Presentation, Working with text boxes, Apply Character Formats, Format Paragraphs, View a Presentation, Saving work, creating new Slides, Changing a slide Layout, Applying a theme, Changing Colors, fonts and effects, apply custom Color and font theme, changing the background, Arrange Slide sequence,</p> <p>4.2 Inserting Media elements: Adding and Modifying Graphical Objects to a Presentation - Insert Images into a Presentation, insert audio clips, video/animation, Add Shapes, Add Visual Styles to Text in a Presentation, Edit Graphical Objects on a Slide, Format Graphical Objects on a Slide, Group Graphical Objects on a Slide, Apply an Animation Effect to a Graphical Object, Add Transitions, Add Speaker Notes, Print a Presentation.</p> <p>4.3 Working with Tables: Insert a Table in a Slide, Format Tables, and Import Tables from Other Office Applications.</p> <p>4.4 Working with Charts: Insert Charts in a Slide, Modify a Chart, Import Charts from Other Office Applications</p>
UNIT 5. BASICS OF INTERNET (Hrs- 02)	
<p>5a. Explain use of the given setting option in browsers.</p> <p>5b. Explain features of the specified web service.</p> <p>5c. Describe the given characteristic of cloud.</p> <p>5d. Explain the specified option used for effective searching in search engine</p>	<p>5.1 World Wide Web: Introduction, Internet, Intranet, Cloud, Web Sites, Web Pages, URL, web servers, basic settings of web browsers-history, extension, default page, default search engine, creating and retrieving bookmarks, use search engines effectively for searching the content.</p> <p>5.2 Web Services: e-Mail, Chat, Video Conferencing, e-learning, e-shopping, e-Reservation, e-Groups, Social Networking.</p>

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Prepare journal of practicals.
- b. Prepare a sample document with all word processing features.(Course teacher shall allot appropriate document type to each students)
- c. Prepare PowerPoint Presentation with all the presentation features.(Course teacher shall allot various topics to the groups of students)
- d. Prepare Database/spreadsheets in groups, related to various Fields/Organizations
- e. Undertake micro projects

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with power plant system and equipments.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and
- h. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**. The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. (Affective Domain Outcomes). Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission. The student ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Word documents: Prepare Time Table, Application Notes, Reports(Subject teacher shall assign a document to be prepared by the each students)
- b. Slide Presentations: Prepare slides with all Presentation of reports(Subject teacher shall assign a presentation to be prepared by each student.
- c. Spreadsheets: Prepare pay bills, tax statement, student's assessment record using spreadsheets (Teacher shall assign a spreadsheets to be prepared by each student
- d. Web Browser/Email: Create Email ID using any web browser and E-mail service and explore all the options available in Email Accounts such as, drive, forms etc.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Computer Fundamentals	Goel, Anita, Pearson Education, New Delhi, 2014,	ISBN-13: 978-8131733097
2	Computer Basics Absolute Beginner's Guide, Windows 10	Miller, Michael, QUE Publishing; 8th edition August 2015	ISBN: 978-0789754516
3	Microsoft Office 2010 for Windows: Visual Quick Start	Schwartz, Steve, Pearson Education, New Delhi India, 2012	ISBN:9788131766613
4	OpenOffice.org for Dummies	Leete, Gurdy, Finkelstein Ellen, Mary Leete, Wiley Publishing, New Delhi 2003	ISBN : 978-0764542220
5	Microsoft Office 2010: On Demand	Johnson, Steve, Pearson Education, New Delhi India, 2010.	ISBN : 9788131770641

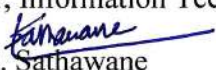



13. SOFTWARE/LEARNING WEBSITES

1. <http://www.nptel.ac.in>
2. <https://www.microsoft.com/en-in/learning/office-training.aspx>
3. <http://www.tutorialsforopenoffice.org>
4. <https://s3-ap-southeast-1.amazonaws.com/r4ltue295xy0d>

14. PO/PSO – COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	-	-	2	1	-	2
CO2	-	-	-	2	2	2	3
CO3	3	2	2	2	2	2	3
CO4	-	-	-	2	2	2	3
CO5	1	-	-	-	1	-	1

	PSO1	PSO2
CO1	1	-
CO2	-	1
CO3	-	1
CO4	-	1
CO5	1	1

<p>Sign:</p> <p>Name:</p> <p>1. Mrs. A. D. Kshirsagar (Lecturer, Information Technology)</p> <p>2. Mrs. K.S.  Sathawane (Lecturer, Computer Engineering)</p> <p>(Course Expert /s)</p>	<p>Sign: </p> <p>Name: (Mr. U.V. Kokate) (S B Nikan) (Head of Department) (Computer Engineering Dept.)</p>
<p>Sign: </p> <p>Name: Mr. V. G. Tambe (Programme Head of Department)</p>	<p>Sign: </p> <p>Name: Mr. A.S. Zanpure (CDC)</p>

Government Polytechnic, Pune

'180 OB'– Scheme

Programme	Diplôme in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Textile Science - I
Course Code	DD 2101
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		ESE	PA	ESE	PA	
				Marks	80	20	--	--	100
04	00	00	04	Exam Duration	3 Hrs	1 Hrs	--	--	

(*):OE/POE (Oral Examination/Practical & Oral Examination -NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course is to understand the basic textile related terminologies and selecting appropriate textile fiber after studying its process and implement the knowledge of appropriate fabric to design dress.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Select appropriate fabric to design the dress.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Use appropriate terminologies of textile.
2. Select appropriate fiber according to need.
3. Use appropriate fabric to garment manufacturing
4. Differentiate natural fibers and manmade fibers.
5. Identify the types of yarns

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. TERMINOLOGY OF TEXTILES(12hrs, 16marks)	
1a. Define warp and weft yarns. 1b. Enlist the types of yarns. 1c. Define knitting 1d. Define bonding 1e. Define fiber and yarns.	1.1 Weaving terminologies- 1.2 Weaving 1.3 Fabric 1.1.1 Ends /Warp 1.1.2 Picks / Weft 1.1.3 Selvedge 1.1.4 Ends / Inch and Picks /Inch 1.1.5 Reed Count and warping calculations 1.1.6 Thread Count 1.2 Knitting– terminologies- 1.2.1 Warp 1.2.2 Weft 1.3 Bonding- 1.3.1 Non-Woven 1.3.2 Felting 1.4 Fiber:- 1.4.1 Staple Fiber, 1.4.2 Filament Fiber 1.4.3 Monofilament or multifilament Fiber 1.5 Yarn- 1.5.1 Thrown Yarns 1.5.2 Spun Yarns
UNIT 2 NATURAL FIBRE (12hrs, 16marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
2a. Enlist the types of cellulosic fibers and protein fibers. 2b. Give classification of natural fibers 2c. State manufacturing of cotton fiber. 2d. Explain the cultivation of silk. 2e. Differentiate between woollens and worsted. 2f. Draw flow chart of manufacturing process.	Introduction and classification of Textile Fibers and Natural Fibers- 2.1 Manufacturing process of Cellulosic Fibers- 2.1.1 Cotton 2.1.2 Linen 2.2 Manufacturing process of Protein Fibers- 2.2.1 Wool 2.2.2 Silk
UNIT 3 MANMADE OR ARTIFICIAL FIBRES (12hrs, 14 marks)	
Part A: 3a. Give classification of manmade fiber. 3b. Enlist thermoplastic fibers. Explain manufacturing process of any one. 3c. Explain manufacturing process of viscose rayon 3d. State the uses of asbestos and glass 3e. Draw flow chart of manufacturing process.	Introduction and Classification of Manmade Fibers- 3.1 Manufacturing process of Thermo plastics fibers – 3.1.1 Nylon 3.1.2 Polyester 3.2 Manufacturing process of Non-Thermoplastic fiber – 3.2.1 Viscose Rayon 3.2.2 Acetate Rayon 3.3 Manufacturing process of Mineral Fibers – 3.3.1 Asbestos & Glass
UNIT 4 YARN FORMATION (12hrs, 14 marks)	
4a. State the types of yarns according to its characteristics 4b. Define blending of yarns. 4c. Give characteristics of coral and spiral yarns. 4d. Explain S and Z twist of yarns. 4e. State qualitative testing of yarns.	4.1 Classification of Yarn and its Characteristics- 4.1.1 Simple Yarn – 2 ply. 4 ply Multiple and Cable. 4.1.2 Novelty Yarn – Single, Coral, Spiral, Knot, Chenille, Gimpy, Slub 4.2 Blending of Yarn 4.2.1 Twisting of Yarn according to direction- (S & Z Twist, Low twist, Hard twist, Crape twist, Twist per Inch) 4.3 Testing of Yarn- 4.3.1 Qualitative Testing 4.3.2 Quantitative Testing
UNIT 5 FABRICS FROM YARNS (08hrs, 12 marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
5a. Define flat braid and round braid. 5b. Define bobbinet and tulle. 5c. Explain the process of lace manufacturing.	5.1 Braids – Processing 5.1.1 Terminology- Flat and Round braids 5.2 Net- Processing 5.2.1 Terminology- Bobbinet, Malines and Tulle 5.3 Laces- Processing 5.3.1 Parts of Lace- Bride or reseau, Cordonnet,, Picot, toile 5.3.2 Types of laces- All over lace, Flouncing, Galloon, Insertion, Edging, Beading, Medallion
UNIT –VI FABRIC FROM ANIMAL SKIN (08hrs, 08 marks)	
6a. Define tanning of leather. 6b. State the characteristics of suede. 6c. State the types of fur.	6.1 Leather- Introduction of leather and suede 6.1.1 Terminologies- Vegetable tanning, Chrome tanning, Alum tanning. 6.2 Fur- Introduction and Types

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Terminology of Textiles	12	10	02	04	16
II	Natural Fiber	12	10	01	05	16
III	Manmade or Artificial Fibers	12	08	02	04	14
IV	Yarn Formation	12	08	03	03	14
V	Fabrics From Yarns	08	05	02	05	12
VI	Fabric from Animal Skin	08	03	01	04	08
Total		64	44	11	25	80

9. SUGGESTED STUDENT ACTIVITIES:

Other than class room and laboratory activities following are the suggested guided co curricular student's activities which need to be undertaken to facilitate the attainment of various course outcomes of this course. The students are required to maintain portfolio of their experiences which he/ she will submit at the end of the term.

- Prepare a catalogue of collection of fabric swatches.
- Fabric identification by physical test.
- Fabric identification by chemical test.
- Select any three fabrics (cotton, silk, wool, linen, polyester) drape on a mannequins and analysis report of the pattern of draping,

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES:

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Arrange industrial visits to Yarn manufacturing units and demonstrate process.
- j. Plan an expert lecture.
- k. Use you tube videos as a source of demonstration..

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fiber to Fabric	Bernard P. Carbman, N. Yoris MGH	ISBN:0-07-013137-6
2	Text Book of Clothing ,Textile and Laundry	N. Delhi Kalyani, Gupta Sushma	-----
3	Fashion Production Terms	Debble Ann Gioello and Beverly Berke, Fairchild publications	ISBN:0870052004 ISBN:9780870052002
4	Fundamentals of Textile and Textile Design	Meller Susan,Hydrabad orient longmar Focal press N.Y.	-----
5	Guide to Clothing	Theodora Failola Priest	-----

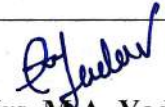




13. SOFTWARE/LEARNING WEBSITES

1. Apparel Clothing Manufacturing
2. https://en.wikipedia.org/wiki/Textile_manufacturing
3. <https://textilelearner.blogspot.com/2012/02/textile-manufacturing-process-process.html>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	1	2	-	-
CO2	3	-	1	1	-	-	1
CO3	3	1	-	2	2	-	1
CO4	3	-	-	1	1	-	1
CO5	3	1	1	3	2	-	1

	PSO1	PSO2
CO1	3	-
CO2	2	1
CO3	1	2
CO4	1	1
CO5	3	2

Sign:  Name: Mrs. M.A. Yadav Sign:  Name: Ms. S.M. Waghchaure (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fundamentals of Embroidery
Course Code	DD2102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory		Practical		Total Marks
L	T	P	C	ESE	PA	* ESE	PA	
00	00	04	04	Marks	--	--	50	50
				Exam Duration	--	--	--	--

(*):PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provide the knowledge of embellishing the apparel products through art skills.After completing this course student will be able to develop hand embroidery product by using appropriate needles, threads and motifs.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop hand embroidery design on apparel product.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Use Straight Stitch design on an article
2. Embellished an apparel product by using Loop stitch .
3. Make an article by using knot stitch.
4. Enhance an apparel product by using Laid & Couched
5. Develop motif and embellished the article with Composite Family and innovative embroidery

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	Prepare a sample by using Straight Stitch Family- 1. Running Stitch 2. Back Stitch 3. Satin Stitch 4. Holbein Stitch 5. Seed Stitch 6. Fern Stitch.	1	10
2.	2	Make a sample by using Looped Family – 1. Chain Stitch 2. Button Hole Stitch 3. Feather Stitch	2	10
3.	3	Prepare a sample by using Knotted Family – 1. Bullion Knot 2. French Knot	3	10
4.	4	Prepare a sample by using Laid & Couched Family – 1. Square Laid Work 2. Basic Couching 3. Bokhara Couching	4	10
5.	5	Make a sample by using Composite Family – 1. Wheat Ear Stitch 2. Whipped Long Tack Stitch 3. Lazy Daisy 4. Spider Web	5	10
6.	6	Prepare a sample by using Silk ribbon embroidery.	5	10
7.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	04
		Total Hrs		64

Sr.No.	Performance Indicators	Weightage in %
a.	Preparing or tracing of motif on fabric.	20
b.	Handling of instruments and material during performing practical	20
c.	Follow safety measures	20
d.	Accuracy in performance	20
e.	Finishing in performance	20
	Total	100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Tracing tools-tracing wheel, tracing paper, yellow croban Marking tools-tailors chalk Cutting tools-scissor, pinking shear Finishing tools- iron Hand embroidery needles, thread, , cotton, silk , muslin fabric	1 to 7
2	Tracing tools-tracing wheel, tracing paper, yellow croban Marking tools-tailors chalk Cutting tools-scissor, pinking shear Finishing tools- iron Thread, zardosi, sequence silk ribbon, cotton, silk , muslin fabric, metal thread	1 to 7

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare folder based on practical performed in laboratory.
- Prepare flow charts diagram of each embroidery family

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Use Flash/Animations to explain various components and its application..

- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- Develop design motif and embellished the article by using Bullion Knot embroidery.
- Develop design motif and embellished the article by using French Knot embroidery.
- Prepare and embellished the article by using mirror work.
- Prepare and embellished the article by using patch work.
- Prepare a report and collection of couture embroidery.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition , Year of publication	ISBN Number
1	Bats ford Encyclopedia of embroidery stitches	Anne Butler, Chrysalis Books,1983 year	ISBN-13: 978-0713438499
2	Complete Guide to Needle	Virginia Colton, Reader's digest, 1979 year	ISBN-10: 0895770598
3	Indian Embroidery	Rosemary Crill, Victoria & Albert Museum,1999 year	ISBN-13: 978-1851773107





13. SOFTWARE/LEARNING WEBSITES

- wwwsewguide.com
- wwwpinterest.com
- <https://www.youtube.com/watch?v=Uyyes1FhQNI>
- <https://www.youtube.com/watch?v=qE5alpJ-bVo>

14. PO/ PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	2	-	-	1	1
CO2	3	-	2	-	-	-	1
CO3	3	-	-	-	-	-	1
CO4	3	-	-	-	-	-	1
CO5	3	-	2	-	-	-	1

	PSO1	PSO2
CO1	1	-
CO2	1	1
CO3	1	-
CO4	2	2
CO5	1	-

Sign:  Name: Ms. N. V. Gondane (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fashion Drawing
Course Code	DD2103
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
L	T	P			C	Theory		Practical	
L	T	P	C		ESE	PA	* ESE	PA	
00	00	04	04	Marks	--	--	50	50	100
				Exam Duration	--	--	--	--	

(*): PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides foundation for drawing, proportion, figure type that enables the students to develop skills of illustration. It also develops skill of accessories designing, traditional painting, textile designing through swatch rendering using appropriate color scheme.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop motif, swatch and traditional painting with suitable color scheme.**

4. COURSE OUTCOMES (COs)

The practical experiences associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Draw the facial features of human anatomy
2. Illustrate Proportionate male female and kids croquie.
3. Develop color wheel and color scheme.
4. Render different textile print, painting and embroidery
5. Design Trendy Accessories.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Face feature Blocking- Draw basic blocking of Eyes, Lips, Nose, Arms, Hands, legs and foot.	1,2	08
2.		Draw Face dimension with hairstyles(Front,3/4,Side and Rare View	1,2	04
3.	2	Mechanical Croquie Illustrate 8 head and 10 head mechanical croquie with flesh (Male, Female)	1,2	04
4.		Illustrate proportionate kids croquie.	1,2	04
5.	3	Color Draw and render Color wheel.	3,4	02
6.		Render Gray Scale and Value Scale(primary, secondary, tertiary colors)	3,4	06
7.		Illustrate a single design and render it using color scheme- Complementary Color Scheme, Double Complementary Color Scheme, Split Complementary Scheme, Double Split Complementary Color Scheme, Warm Color Scheme, Cool Color Scheme.	3,4	06
8.		Illustrate a single design and render it using color scheme- Analogous Color Scheme, Achromatic Color Scheme, Monochromatic color scheme, Polychromatic color scheme, Triad color scheme.	3,4	06
9.	4	Swatch Rendering Render Fabric Swatch using Review of movie recent prints-Floral, Geometrical, Ethnic , Abstract and Conversational	3,4	08
10.		Draw and Render the specimen of Traditional Painting –Warli, Madhubani and Kalamkari	3,4	08
11.	5	Accessories Illustrate and render accessories- Hair clip, watches, Necklace set, Handbags and footwear etc.	3,5	04
12.	All	Complete a micro project based on guidelines provided in Sr. No.11	1-5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Sketching (Basic)	20
b.	Developing Design	30
c.	Render with suitable Colors Combination.	30
d.	Page Composition and Presentation	10
e.	Neatness and completion of work on time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Drawing Table and Drawing Board	1 -12
2	Stationery Material-Drawing Sheets	1 -12
3.	Colouring Material-Poster Color, Staddlers, Markers, etc	1 -12

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN - NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- Conversion of croque from 8 to 10 and 10-12 head..
- Render color wheel (24 parts)
- Prepare a report on Traditional Painting.
- Prepare E-Journal of Different brands logo and identify and label its color Scheme .
- Library formation of trendy accessories.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the

development of the COs through classroom presentations (see implementation guideline for details).

- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO PROJECTS-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty

- a. Prepare Library formation of fabric sample/printout of swatch for Monochromatic Color Scheme
- b. Prepare Library formation of fabric sample/ printout of swatch for Achromatic Color Scheme
- c. Prepare Library formation of interior items based on Analogous Color Scheme
- d. Prepare Library formation of interior items based on Polychromatic Color Scheme
- e. Prepare Library formation of accessories based on Complementary Color Scheme
- f. Prepare Library formation of accessories based on Warm Color Scheme
- g. Prepare Library formation of accessories based on Cool Color Scheme

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1.	Ladies Fashion Illustration	Author-Kojiro kumagai Publisher- Nippan ,2 nd ed.Edition May1 1987	ISBN-10:4766102673 ISBN-13:978-4766102673
2.	Fashion Drawing :The Basic Principles	Author-Anne Allen,Julian Seamen Publisher- BatsfordLtd 5 May 1993	ISBN-10:0713470968 ISBN-13:978-0713470963
3.	Fashion Design Drawing and Presentation	Author-Patrik John Ireland Publisher- BatsfordLtd 28 July 1982	ISBN-10:0713435194 ISBN-13: 978-0713435191
4.	New Fashion Illustrations	Author-Kojiro kumagai Publisher- Kodansha Co. Ltd. 22 Dec 2000	ISBN-10:4062065339 ISBN-13: 978-4062065337

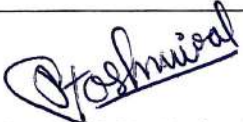



13. SOFTWARE/LEARNING WEBSITES

1. <http://en.m.wikipedia.org>
2. www.google.com
3. www.pinterest.com
4. <http://youtu.be/9NxAYNipaDQ>
5. Face features blocking- <https://www.youtube.com/watch?v=qskU9ZJzC04>
6. Color wheel -https://www.youtube.com/watch?v=L1CK9bE3H_s
7. Basic color wheel- <http://youtu.be/YnXirHa6vn0>
8. Accessories-<http://pin.it/4Eo7O8V>
9. Traditional Painting Warli- <https://ruralindiaonline.org/en/articles/its-the-warlis-who-make-these-paintings/>

14. PO/PSO - COMPETENCY- CO -MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	-	-	-	-	-	-
CO2	2	-	-	-	-	-	-
CO3	3	-	-	-	-	-	2
CO4	3	-	-	-	2	-	2
CO5	3	-	-	-	2	-	2

	PSO1	PSO2
CO1	-	-
CO2	-	-
CO3	-	-
CO4	2	3
CO5	2	3

Sign:  Name: Mrs. P.V. Toshniwal (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanzure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Kid's Garment Manufacturing
Course Code	DD2104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
			C		ESE	PA	* ESE	PA	
				Marks	40	10	50	50	150
02	00	06	08	Exam Duration	2 Hrs	1/2Hr	--	--	

(*):PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Pattern Development is the part and parcel of Apparel Industry. Student should be able to apply the skills of pattern development from basic pattern by using various drafting, sewing and finishing techniques. The student should be able to apply the technique of measuring Kid's figure size and create commercial pattern from basic pattern for kid's fashion industry.

3. COMPETENCY

The aim of this course is to help the students to attain apparel industry identified competency through teaching learning technique.

- **Develop commercial pattern for kids through innovative Apparel Manufacturing methods.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Interpret kid's size chart for apparel pattern.
2. Identify the factors affecting kid's wear.
3. Apply the concept of fabric spreading and layout.
4. Explain importance of cost sheet.
5. Apply Apparel Manufacturing drafting ,cutting and sewing methods.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	¼ Drafting of Umbrella Skirt, layout and cost sheet of Umbrella Skirt .	5	06
2.		Full scale drafting and cutting of Umbrella Skirt .	5	06
3.		Stitching and finishing of Umbrella Skirt .	5	08
4.	2	¼ Drafting of Party Frock , layout and cost sheet of Party Frock.	5	06
5.		Full scale drafting and cutting of Party Frock.	5	06
6.		Stitching and finishing of Party Frock.	5	06
10.	3	¼ Drafting of Pinafore, layout and cost sheet of Pinafore.	5	06
11.		Full scale drafting and cutting of Pinafore	5	06
12.		Stitching and finishing of Pinafore	5	06
13.	4	¼ Drafting of Night Suit , layout and cost sheet of Night Suit.	5	06
14.		Full scale drafting and cutting of Night Suit	5	06
15.		Stitching and finishing of Night Suit.	5	06
16.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	04
Total Hrs				96

Sr .No.	Performance Indicators	Weightage in %
a.	Set up drafting, cutting and stitching materials.	20
b.	Handling of tools and machines during performing practical	20
c.	Follow Safety measures	20
d.	Accuracy in performance	20
e.	Submission in time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Measuring tools-measuring tape, scale, French curve Tracing tools-Tracing wheel, tracing paper, yellow croban	1,2,4,5,7,8,10,11,13, and 14
2	Marking tools-Tailors chalk	1,2,4,5,7,8,10,11,13, and 14
3	Cutting tools-Scissor, knotcher	1,2,4,5,7,8,10,11,13, and 14
4	Sewing tools-Needle, Bobbin and bobbin case, needle clamp, thread, fabric sewing machine.	3,6,9,12, and 15
5	Finishing tools- Iron	3,6,9,12, and 15
6	Stationary such as –pencil, eraser, brown paper, practical book	1 to 15

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to Kid's Wear (10hrs, 10marks)	
1a. Compare standard measurement of kid's chart. 1b. Describe the growth of children and adolescents. 1c. Identify types of design, fabric, prints, trims and lining for kid's wear. 1d. Classify the Brands for Kids	1.1 Introduction to Kid's wear 1.1.1 Introducing kid's size chart 1.1.2 The growth of children and adolescents 1.1.3 Selection of designing (according to the age group/season) 1.1.4 Selection of motifs /prints 1.1.5 Sourcing of fabric and trims 1.1.6 Lining for Kid's wear 1.1.7 Study of Brands for Kid's wear
UNIT 2 Factors Affecting for Kid's Wear (10hrs, 12marks)	
2a. Classify kid's costumer according to the age group. 2b. Describe the quality parameters requires for kid's garments. 2c. Enlist the fasteners and opening for kid's wear.	2.1 Factors affecting for kid's wear 2.1.1 Identify kid's costumer (according to the age group) 2.1.2 Determine needs and wants of kid's wear 2.1.3 Quality Parameters for kid's Garment 2.1.4 Safety measures 2.1.5 Fasteners and Opening for kid's wear-velco, zippers, snap 2.1.6 Pricing 2.1.7 Objective of pricing 2.1.8 Internal factors of pricing 2.1.9 External factors of pricing
UNIT 3 Fabric Spreading and Layout (08 hrs, 10marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
3a. Differentiate between machine spreading and manual spreading. 3b.Explain fabric layout.	3.1 Introduce spreading of fabric 3.1.1 Machine spreading 3.1.2 Manual spreading. 3.1.3 Types of width of fabric 3.1.4 Types of Layout- Lengthwise layout, open layout, cross and bias layout, double ply layout, and multi ply layout
UNIT 4 Cost Sheet (04hrs, 08marks)	
4a. Define cost sheet. 4b. List out the components of cost sheet. 4c. State the importance of cost sheet.	4.1 Cost sheet 4.1.1 Definition of cost sheet 4.1.2 Components of cost sheet 4.1.3 Importance of cost sheet

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Kid's wear	10	02	04	04	10
II	Factors affecting for kid's wear	10	04	04	04	12
III	Fabric spreading and Layout	08	02	04	04	10
IV	Cost sheet	04	02	02	04	08
Total		32	10	14	16	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Search information about up-coming kid's wear Brands in Fashion Industry.
- Collect information of latest Runways and Garment Fairs and prepare charts of the same.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Use Flash/Animations to explain various components and its application..
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should *not exceed three*.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- Prepare swatch book for kid's wear collection.
- Prepare Flow-charts for night suit construction.
- Prepare casual wear frock drafting using CAD.
- Prepare display board of kid's party wear collection.
- Collect technical specifications sheet of Pinafore.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author Publisher, Edition, Year of publication and	ISBN Number
1	Fashion Studies	Prof. Kripal Mathur NCERT-Publisher 1 st Edition,2014 year	ISBN:10003200000012
2	Zarapkar system of cutting	Zarapkar K.R, Navneet Education (India) Limited Publishers,Bombay 2014 year	ISBN:9788124301999
3	Metric pattern cutting for kid's wear	Winifred Aldrich Publisher: Om Books , 2007 year	ISBN: 978-0632059782





13. SOF SOFTWARE/LEARNING WEBSITES

- cbseacademic.nic.in
- fibre2fashion.com
- www.youtube.com
- www.gerbtechnology.com

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	1	-	-	2
CO2	3	2	2	3	1	1	2
CO3	3	2	2	2	1	1	2
CO4	3	2	2	2	1	2	2
CO5	3	3	3	3	3	3	3

	PSO1	PSO2
CO1	3	3
CO2	2	3
CO3	2	3
CO4	3	2
CO5	3	2

Sign:  Name: Mrs. N. V. Gondane (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /15/16/17/18/19/21/22/23/24/26
Name of Course	Textile Chemistry
Course Code	SC2107
Prerequisite	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C		ESE	PA	*ESE	PA	
				Marks	80	20	25	25	150
03	00	02	05	Exam Duration	3 Hrs.	1 Hr	--	--	--

(*PE:(Practical examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Identify chemical properties of fibers by studying relevant chemical finishes, dyes, bleaches for increasing quality of fiber. Students should be aware of various basic parameters for quality fibers. Study of impurities and hardness in water and methods for water softening will help the students to make proper use of water.

3. COMPETENCY

The aim of this course is to help the students to attain the following competency through various teaching learning experiences.

- **Apply principles of textile chemistry to identify and maintain the quality of fibers.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following COs associated with the above mentioned competency:

1. Identify physical and chemical properties of fibers.
2. Select chemical finishes for given fiber.
3. Use dyes according to chemical properties.
4. Use relevant water softening process to solve industrial problems.
5. Select relevant cleaning agent.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	PrOs (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	*Determine longitudinal and cross section of fiber (cotton, linen wool, silk nylon, polyester, and acrylic) by using pick glass.	1	04
2.		Compare characteristics of fibers (cotton, linen wool, silk nylon, polyester, and acrylic) by burning test of fibers in flame	1	04
3.		*Compare characteristics of fibers (cotton, linen wool, silk nylon, polyester, and acrylic) by Solubility test in chemical reagent.	1	04
4.	2	Removal of water-soluble sizes.	2	02
5.	3	Prepare a process flow chart showing dyeing textile materials. (Sample collection of fabrics.)	3	02
6.	4	Bleaching of cotton and silk by using hydrogen peroxide.	4	04
7.	5	Determine hardness of given water sample by EDTA method.	5	02
8.		Determine chlorine hardness of water by Mohr's method.	5	02
9.		Determine water hardness by using Soap test	5	02
10.	6	Stain removal of different fabrics by using acid and base or white petrol.	6	02
11.		Prepare starch, borax and gelatin solutions.	6	04
12	1TO 6	*Complete a Micro- project as per the guidelines in point no. 11	1 to 6	04
Total Hrs.				32

* Expt.No.12 compulsory, Perform Expt .No.1 or 3

Sr.No.	Performance Indicators	Weight age in %
a.	Prepare experimental set up and chemicals required	20
b.	Handling of instruments and chemicals during performing practical.	20
c.	Follow Safety measures	10
d.	Accuracy in calculation and comparison and result	10
e.	Answers to questions related with performed practices.	20
f.	Submit journal report on time	10
g.	Follow Housekeeping	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Expt.No.
1	Magnifying glass (pick glass.)	10
2	Digital Electronic Balance	01

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. TEXTILE FIBERS (08hrs, 16marks)	
1a. Define textile fiber. 1b. State characteristics of textile fibers. 1c. Classify fibers on the basis of their sources. 1d. State physical and chemical properties of fibers. 1e. Compare fibers on the basis of physical and chemical properties.	1.1 Definition of textile fibers, classification of fiber based on its source. 1.2 Physical and chemical properties of cotton, linen, wool, silk, asbestos fiber, nylon, polyester, acrylic. 1.3 Physical properties: composition, structure, length, strength, moisture absorption, shrinkage, resiliency, heat conductivity 1.4 Chemical properties: action of acids, action of alkalis action of bleach, affinity for dyes.
UNIT 2. FINISHES (09hrs, 12marks)	
2a Define finishes. 2b. State purposes of finishing. 2c. Classify finishing based on textile processing. 2d. Describe preliminary treatment involved in finishing. 2e Explain effects of chemical finishes on fibers. 2f. Distinguish between Waterproof and Water repellent finishes.	2.1 Definition of finishes, purposes of finishing. 2.2 Classification of finishing on the basis of textile processing (mechanical finishes, chemical finishes) 2.3 Preliminary treatment involved in Finishing, Bleaching, Scouring, Singing, Desizing. 2.4 Chemical Finishes: Mercerizing, Crease resistance, Fire proof, and Water proof, Water repellent
UNIT 3. DYES (09hrs, 12marks)	
3a. Define dyes 3b. Classify dyes according to their sources. 3c. List the types of dye. 3d. Select relevant dyes for different fibers. 3e. Draw flow chart showing different processes in dyeing textile materials.	3.1 Definition of dye, classification of dyes according to their sources: natural dyes, vegetable, animal, mineral. Artificial dyes: direct or salt, basic, acidic, sulphur, mordant, vat, disperse, reactive. 3.2 Dyes applied to fiber classes-cellulose fiber, polyamide, polyester, acrylic, mineral. 3.3 Process flow chart showing dyeing textile material.

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 4. BLEACHES AND THEIR SUTABILITY (08hrs, 16marks)	
4a. Define bleaching agent 4b. Classify bleaches 4c. State Purposes of bleaching 4d. Describe mechanism of bleaching 4e. Explain the action of oxidizing and reducing bleaches 4f. Describe over bleaching.	4.1 Definition of bleaching agent, classification of bleaches: oxidizing and reducing, Purposes of bleaching. 4.2 Mechanism of bleaching. 4.3 Oxidizing: sodium hypo chloride, hydrogen peroxide, sodium per borate, potassium permanganate, sunlight. 4.4 Reducing: sodium sulphite, sodium bisulphate, sodium thiosulphite, 4.5 Over bleaching.
UNIT 5.WATER (06hrs 12marks)	
5a. Define hard water and soft water 5b. State causes of hardness of water 5c. List types of hardness. 5d. Explain the bad effects of hard water in dye and textile industries. 5e. Describe the method of removal of hardness by lime soda and zeolite process. 5f. Describe the method of removal of hardness by ion exchange method. 5g. State applications of p^H in engineering. 5h. Calculate the p^H and p^{OH} .	5.1 Definition of hard water and soft water ,causes of hardness, types of hardness. 5.2 Bad effect of hard water in industries (textile, dye) 5.3 Removal of hardness by lime soda method, zeolite, ion exchange process. 5.4 p^H scale, applications of p^H in engineering. Numerical based on p^H and P^{OH} .
UNIT6.MAINTAINANCE OF FIBRES (08hrs, 12marks)	
6a. List the consttuents of soap and detergent. 6b. Describe action of soap and detergent. 6c. Distinguish between soap and detergent. 6d. Describe preparation of starch, gum, borax and gelatin solution. 6e. List types of blues. 6f. Describe bluing process. 6g. Classify stains. 6h. Select proper method of stain removal for different Fabrics.	6.1 Cleaning agent: soap- chemical composition, action of soap. Detergent: chemical composition, action of detergent Difference between soap and detergent. 6.2 Stiffening agent: starch, gum, gelatin, borax, Preparation and application of starch solution, (Boiling water starch, Cold water starch) gum, borax, and gelatin. 6.3 Whitening agent: Laundry blues, types of blues, bluing process Stain removal- Classification of stains, methods of removal of stains from different fabrics.

8 SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Textile Fibres	8	10	6	0	16
II	Finishes	9	6	4	2	12
III	Dyes	9	6	4	2	12
IV	Bleaches And Their Sutableity	8	8	4	4	16
V	Water	6	6	4	2	12
VI	Maintaince of Fibres	8	6	2	4	12
Total		48	42	24	14	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity

- Prepare journals based on practical performed in laboratory.
- Prepare a chart showing different dyes with their application for different textile materials.
- Search information about new synthetic textile fibers.
- Prepare posters to illustrate the use of different fibers.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only **one micro- project** is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**. S/he ought to submit it by the end of the semester to develop the industry oriented COs .Each micro project should encompass two or more COs which are in fact, an integration of PrOs .UOs and ADOs .(Affective Domain Outcomes) .The micro project could be application based, internet based, workshop based ,laboratory based or field based. Each student will have to maintain dated work dairy consisting of individual contribution in the project work.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

1. Prepare a chart showing longitudinal and cross section of fiber (cotton, linen ,wool, silk nylon, polyester, and acrylic) by using pick glass.
2. Prepare a flow chart showing dying textile material (sample collection of textiles)
3. Collect and analyse different water samples from different sources.
4. Prepare a chart showing suitable methods of stain removal for different fabrics.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Polytechnic Chemistry	V.P. Mehta, Jain brothers, New Delhi.2017	978818360093X
2	Engineering Chemistry	P.C.Jain and Monica Jain, Dhanpat Rai and sons, New Delhi.2019	9789352166411
3	Applied Chemistry	S.N.Narkhede, M. M. Thatte, NiraliPrakashan, Pune.2003	B07HN6ZLBM
4	Text book of clothing and laundry	Sushma Gupta, Neenu Garg, Kalyani,2018	9327294475
5	Textile Chemistry	Vishu Arora,Abhishek,2011	818247308X
6	Textile Chemical Processing	CBSE Class 12, Student Handbook and practical manual	Student Handbook and practical manual






13. SOFTWARE/LEARNING WEBSITES

1. https://en.wikipedia.org/wiki/Textile_manufacturing
2. <https://textilelearner.blogspot.com/2012/02/textile-manufacturing-process-process.html>
3. https://en.wikipedia.org/wiki/List_of_textile_fibres
4. [https://en.wikipedia.org/wiki/Finishing_\(textiles\)](https://en.wikipedia.org/wiki/Finishing_(textiles))
5. http://apsacwestridge.edu.pk/assets/admin/upload/notes/Classification_of_Dyes.pdf

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	1	1	-	-	-
CO2	3	2	1	1	-	-	-
CO3	3	2	1	1	-	-	-
CO4	3	2	1	-	1	-	-
CO5	3	2	1	-		-	-

	PSO1	PSO2
CO1	1	-
CO2	1	-
CO3	1	-
CO4	1	-
CO5	1	-

<p>Sign:</p>  <p>Name: Mrs. K.V. Mankar (Course Expert)</p>  <p>Mrs. S.A. Kakade (Course Expert)</p>	<p>Sign:</p>  <p>Name: Mrs. N. S. Kadam (Head of the Department)</p>
<p>Sign:</p>  <p>Name: Mr. V. G. Tambe (Programme Head of the Department)</p>	<p>Sign:</p>  <p>Name: Mr. A. S. Zanpure CDC Incharge</p>

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	History of Design
Course Code	DD 2105
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C	ESE	PA	ESE	PA		
				Marks	40	10	--	--	50
03	00	00	03	Exam Duration	02 Hrs	1/2Hr	--	--	--

(*):OE/POE (Oral Examination/Practical & Oral Examination -NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of ancient civilizations, materials used for design development of visual forms in paintings/ architecture, classical art and artist, Avant Grade and Post Modern Visual Art.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Invent and apply history, art and culture for making fashion products.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Recall historic civilisation.
2. Recognize the role of the various art movements, theories of art and design.
3. Interpret the role of art and design development over the world.
4. Translate past practices in to a technological advancement.
5. Apply the knowledge to create new design concepts.

5. **SUGGESTED PRACTICALS/ EXERCISES :**
NA

6. **MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED:**
NA

7. **THEORY COMPONENTS**

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to World Art & Cultures (06hrs, 06marks)	
1a. State the concept of visual design perception 1b. Explain communications forms with an example 1c. Describe the development of visual forms 1d. Comparison between various forms of designs	1.1 Basics of “Visual Design Perception” 1.2 “Visual Communication Form”- 1.2.1 Ancient Civilizations 1.2.2 Materials used for Art and Design 1.3 Development of Visual Forms during- 1.3.1 Prehistoric 1.3.2 Egyptian 1.3.3 Mesopotamian civilization
UNIT 2. Ancient World Art & Architecture (06hrs-,08marks)	
2a. Define the role of architecture in design development 2b. List Gothic and Renaissance paintings 2c. Explain Design development of stained glass windows. 2d. Render the contribution of painters like Giotto, Duccio & Comabue	2.1 Romanesque and Gothic architecture - 2.1.1 Gothic and early Renaissance painting 2.1.2 Development of arches, vaults, buttresses and stained glass windows 2.1.3 Painters having individuality in terms of style- Giotto, Duccio & Comabue
UNIT 3. Ancient Indian Art & Architecture (06hrs, 08marks)	
3a. Enlist the features of Rajput and Mughal Miniature paintings/ architecture 3b. State the Principal of Design of Temple Architecture 3c. Explain various cave paintings 3d. Describe Famous Indian Art	3.1 History and methods of Indian architecture - 3.1.1 Rajput and Mughal Miniature paintings/ architecture 3.1.2 Temple Architecture in South India 3.1.3 Ajanta painting, Ellora sculptures 3.1.4 Famous Indian Art
UNIT 4. Contribution of Classical Art and Artist (06hrs, 09marks)	
4a. State the contribution of Classical Art and Artist 4b. Define various European art stylistic period 4c. Describe the various art periods 4d. Explain -Futurism & Naturalism	4.1 European art stylistic periods - 4.1.1 Baroque 4.1.2 Rococo 4.1.3 Neoclassicism 4.1.4 Romanticism 4.1.5 Realism 4.1.6 Impressionism 4.1.7 Fauvism 4.1.8 Cubism

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	4.2 Futurism & Naturalism - 4.2.1 Monet 4.2.2 Manet 4.2.3 Van Gogh 4.2.4 Edward Munch 4.2.5 Henri Matisse 4.2.6 Kandinsky & August Rodin
UNIT 5. Avant Grade & Post Modern Visual Art (08hrs, 09marks)	
5a. Define Avant Grade 5b. Describe Various Art and movements 5c. Enlist various Modern Visual Art 5d. Explain the contribution of street artists	5.1 Various Art and movements- 5.1.1 Dada, 5.1.2 Abstract- Expressionism, 5.1.3 Surrealism, 5.1.4 Pop Art, 5.1.5 Op Art, 5.1.6 Minimalism, 5.1.7 Photorealism, 5.1.8 Neo Expressionism, 5.1.9 Digital Art 5.2 Street Art Artist – 5.2.1 Marcel Duchamp, 5.2.2 Pablo Picasso, 5.2.3 Jackson Pollock & 5.2.4 Kasimir Malevich

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to World Art & Cultures	06	2	2	2	6
II	Ancient World Art & Architecture	06	3	3	2	8
III	Ancient Indian Art & Architecture	06	3	3	2	8
IV	Contribution of Classical Art and Artist	06	4	3	2	9
V	Avant Grade & Post Modern Visual Art	08	4	3	2	9
Total		32	16	14	10	40

9. SUGGESTED STUDENT ACTIVITIES:

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record **physical evidences for their** (student's) portfolio which will be useful for their placement interviews:

- A field visit and report writing of cave paintings and sculptures, for Example- Ajanta, Ellora, Karla, Kharosa etc.
- A field visit and report writing of any Historic place- Palaces, Museums, Hawelies forts to understand ancient civilization, art forms, architectures etc.
- Collect information and pictures of the “Fabrics, apparels and jewelry of prehistoric period”.
- Arrange an expert lecture to provide additional information about Indian and World art and Design techniques.
- Make a PPT presentation on “Effect of World War I, II and other disaster on fashion and art”.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any) :

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- Guide student(s) in undertaking micro-projects.
- Use Flash/Animations to explain various components and its application..
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS:

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Art: A World History	Elke Linda Buchholz (Author), Susanne Kaeppele (Author), Karoline Hille (Author), Irina Stotland (Author), Gerhard Buhler (Author), Harry N. Abrams (November 2007) Susie Hodge, Lawrence King Pub, 2017	ISBN:9780810994423
2	The Complete Visual Guide Artists in History - Painting, Sculpture, Styles and Schools (Big Ideas)	Robert Cumming, Penguin (September 2015) Publisher -DK	ISBN:9780241186107
3	Indian Art and Culture	Paperback – 11 Jan 2015 by Nitin Singhania	ISBN:9789385880490
4	The Short Story of Art	Susie Hodge, Lawrence King Pub, 2017	ISBN:978-1780679686

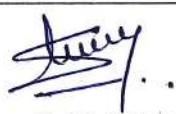



13. SOFTWARE/LEARNING WEBSITES

1. Indian Culture and Heritage
<http://www.nios.ac.in/media/documents/SecICHCour/English/CH.02.pdf>
2. The Story of Textiles –
https://www2.cs.arizona.edu/patterns/weaving/books/wp_1925-1.pdf 3
3. Fashion Studies –
http://cbseacademic.in/web_material/doc/fashion_studies/3_XII_Text_Book.pdf

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	03	-	2	1	1	-	3
CO2	02	-	1	1	1	-	3
CO3	02	-	1	1	1	-	2
CO4	03	1	1	1	1	-	2
CO5	03	-	1	1	1	-	3

	PSO1	PSO2
CO1	-	-
CO2	-	1
CO3	-	1
CO4	-	1
CO5	1	1

Sign:  Name: Mrs. S. N. Shinde (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fashion Styling
Course Code	DD 2106
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C	ESE	PA	ESE	PA	50	
03	00	00	03	Marks	40	10	--		--
				Exam Duration	02Hrs	1/2Hr	--		--

(*):*OE/POE (Oral Examination/Practical & Oral Examination -NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Fashion styling is one of the emerging career options with a rapid growth in fashion and film industry. It also focuses on choosing and coordinating outfits for client in photo shoots and selecting appropriate props and accessories to create complete look according to theme, event, trends etc. It emphasizes the art of clothing coordination and set creation as per different client and occasions those responsible for building new fashion trends.

3. COMPETENCY

The aim of this course is to help the students to attain the following competency through various learning teaching experiences-

- **Interpret latest trend in fashion community and apply relevant techniques for completely new look to promote fashion trends.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Interpret purpose of fashion styling and image design
2. Implement relevant styling technique for a given fashion project.
3. Recommend style plan for client.
4. Use appropriate clothing co-ordination techniques to enhance look
5. Implement styling categories for set creation.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction and History (10 hrs, 08 marks)	
1a. Define Styling Terminology 1b. Explain role of fashion media in Styling 1c. Give difference between Image Design and Image Makeover. 1d. Explain History of Fashion Styling and Image Design	1.1 – Styling Terminology 1.1.1 Costume 1.1.2 Contemporary Style 1.1.3 Cutting Edge Fashion 1.1.4 Collection 1.1.5 Fashion Media 1.1.6 Image Design 1.1.7 Image Makeovers 1.1.8 Style Trunk(stylist essential) 1.1.9 Styling 1.1.10 Stylist 1.1.11 Sourcing 1.1.12 Trend 1.2 History of Fashion Styling And Image Design 1.2.1 Rose Berthin 1.2.2 Ray Petri 1.2.3 Fashion Trend Decades(1900-2000)-1900s
UNIT 2 Classification of Styling (12hrs, 12 marks)	
2a. Define Advertising Styling 2b Enlist the Thematic Styling 2c. Enlist the types of Fashion Show 2d. State the difference between E-Commerce and Personal Stylist 2e. Define Dramatic Shoot 2f. Name Styling Categories 2g. State the Role of Stylist.	2.1 Styling Category 2.1.1. Advertising (Product) 2.1.2. Celebrity(Red Carpet) 2.1.3. Dramatic Shoot 2.1.4. Editorial styling(Personal and Product) 2.1.5. Runway Styling 2.1.6. Fashion Editorial 2.1.7. Personal /Bridal Wardrobe 2.1.8. Still Life 2.1.9. Television/Film 2.1.10 Thematic Styling 2.1.11. Costume Styling (Movies /web series) 2.1.12. Campaign/Look book Styling 2.1.13. Commercial Advertising Styling 2.2 Role and Responsibilities of Fashion Stylist 2.3 Role of Back Stage Captain.
UNIT 3 Clothing Co-ordination (14 hrs, 10 marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
4a. State the advantages of style selection for figure type. 4b. State the purpose of set creation 4c. Give the process of styling modular Plan 4d. Explain the process of Mix and Match	3.1 Principle of Clothing Co-ordination 3.1.1 Style selection – Dos & Don't for Design selection Tall & Thin, Tall & Stout, Short & Stout, Short & Slim etc. Illusion to overcome defects- Color, Texture and Line 3.1.2 Set Creation- (Purpose,Use ,Function) Detail of Shape wear, Costume, Accessories, Props and background etc. 3.1.3 Stylist Modular Dressing plan- Concept of Assemble look with Budget Constraints 3.1.4 Mix and Match- Definition of Mix and Match Types of Seasonal Wear, Types of Occasional Wear, Concept of Garment and Accessories Mix Match
UNIT 4 Styling Techniques (12 hrs, 10 marks)	
4a. List the types of photography 4b. Enlist types of lighting 4c. Explain the importance of Accessories 4d. Explain importance of Props in styling 4e. Explain Importance of Hairstyle and Make up in Styling.	4.1 Types of Photography- 4.1.1.Photo Macro graph 4.1.2.Photo Micro graph 4.1.3.High Speed Photography (Motor Driven Camera) 4.1.4. Underwater Photography 4.2 Types of Lighting – 4.2.1.Rembrandt Lighting 4.2.2. Loop Lighting 4.2.3.Butterfly Lightning 4.2.4.Split Lightning/Paramount Lightning 4.3 Accessories – 4.3.1.Importance of Accessories 4.3.2.Types of Accessories-Men's, Women's, Kids 4.3.3. Props 4.4 Makeup- 4.4.1. History of make up 4.4.2.Importance of Makeup 4.5. Hair style- 4.5.1.Ancient History of Hairstyle-Male, Female 4.5.2. Importance of Hairstyle

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction and History	10	4	2	2	8
II	Classification of Styling	12	6	2	4	12
III	Clothing Co-ordination	14	4	2	4	10
IV	Styling Techniques	12	4	2	4	10
Total		48	18	8	14	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related co-curricular activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- a. Conduct a Shoot to prepare a fashion look book for a specific Brand (well known/newly launched)/ Design/ Accessories. Study and note down all the different aspects like-design concept, personality, event, source, backdrop, Final touch and end movement requirement for a complete event.
 1. Commercial Advertisement/ Native product Advertising
 2. Editorial Styling
 3. Movie/ Theater Styling
 4. Fashion Show Styling
 5. Dance/Singing Shows Styling
 6. Personal Styling-Sports man, Actor, etc.
 7. Suggest Tagline for the Product
- b. Read and Collect articles of fashion stylist and follow on social media.
- c. Choose a celebrity and make a report -compare their various look to under the personal styling.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- c. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- d. Prepare and use power point presentation to understand the topics.
- e. Use videos to explain various concept

11. SUGGESTED MICRO-PROJECTS NA

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Styling	Author-Jo Dingemans Publisher-Red globe press-June1999	ISBN-10:0333770927 ISBN-13:978-0333770924
2	Fashion Stylist	Author-Gillian Armour Publisher-Create space 2012	ISBN-10:1450588107 ISBN-13:9781450588102
3	The professional Wardrobe Stylist	Author-Gillian Armour Publisher-Create space 2012	ISBN-10:1480140236 ISBN-13:9781480140233
4	How to do color Analysis	Author-Gillian Armour Publisher-Create space independent publishing platform 2012	ISBN-10:1461028116 ISBN-13:9781461028116
5	Stylist-The interprets of Fashion	Author- Shannon Burns Publisher-Rizzoli 2007	ISBN-10:0847829243 ISBN-13:978-0847829248
6	Fashion Stylists Handbook	Author- Danielle Griffiths Publisher-Laurelce King Publishing	ISBN-13:9781780678559

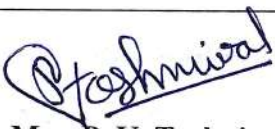


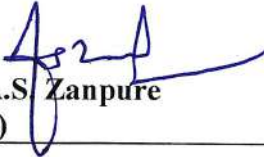
13. SOFTWARE/LEARNING WEBSITES

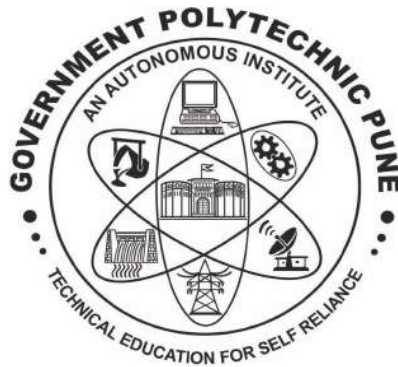
1. Fashion Styling-<https://austrianstyleinstitute.com.au/what-an-editorial-stylist-does-and-how-to-become-one/>
2. Personal Stylist-https://en.wikipedia.org/wiki/Personal_stylist
3. Celebrity Stylist-<http://www.whowhatwear.com/celebrity-style-lessons/slide14>
4. Props and Set Styling- <https://www.styledepartment.co.uk/prop-and-set-styling/>
5. Catalogue styling- <https://issuu.com/blog/catalogs-and-lookbooks>
6. <https://youtu.be/XL8fIbEJ6EY>
7. <https://www.caseypaulstyling.co.uk>
8. <http://youtu.be/1jyEiD0dGi8>
9. https://issuu.com/docs/cizraclugston/docs/fashion_stylist_research_pdf

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	--	--	--	--	--	3
CO2	3	1	1	--	2	--	3
CO3	3	2	2	--	1	1	3
CO4	3	1	1	--	2	2	3
CO5	3	--	--	--	--	--	3

	PSO1	PSO2
CO1	--	3
CO2	1	2
CO3	--	3
CO4	--	3
CO5	--	2

Sign:  Name: Mrs. P. V. Toshniwal (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)



Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing
LEVEL-3 Basic Technology Courses (ALL COMPULSARY)

SR. NO.	COURSE CODE	COURSE NAME
1	DD-3101	Graphic Designing
2	DD-3102	Apparel Manufacturing Technology
3	DD-3103	Industry Manufacturing Technology
4	DD-3104	Illustration Techniques
5	DD-3105	Advanced Illustration Techniques
6	DD-3106	Fashion Merchandising
7	DD-3107	Color Theory
8	DD-3108	Textile Science-II

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Graphic Design
Course Code	DD3101
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C	ESE	PA	*ESE	PA	100	
00	00	04	04	Marks	--	--	50		50
				Exam Duration	--	--	--		--

(*): **PE (Practical Examination)**

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In today's world most of the garment and apparel industries are relies on digital designing. The foundation of any apparel industry is designing. Digital designing is not only speed up the process but save design time, and modify it more easily. This course designed to develop an insight of basic software's used in garment digital designing. After studying this course students will be develop basic designing in garments, prints, logos, mood board & spec sheets.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Combine features of Adobe illustrator and Photoshop for dress designing.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Illustrate designs digitally.
2. Produce designs in illustrator.
3. Develop images in Photoshop.
4. Mix features of digital media.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1.	Illustrator Designing a logo for fashion brands.(1 logo design)	1,2	04
2.		Develop Textile Prints.	1,2	04
3.		Illustrate Tops with different necklines and sleeves. (4 Flat sketches)	1,2	08
4.		Illustrate skirts with different patterns. (4 Flat sketches)	1,2	06
5.		Create a geometric/ mechanical fashion mannequin (2 fashion mannequins)	1,2	04
6.		Develop Fleshing croquis from /mechanical fashion mannequin.(female/male)	1,2	06
7.		Dress up fleshed croquis.(2 male and 2 female)	1,2	06
8		Design accessories Collection.(2 shoes,2 bags)-	1,2	04
9.	2	Adobe Photoshop Create Embroidery patterns. (2 Designs)	3,4	04
10		Select modes of layers/ work with layers.	3,4	02
11.		Use types of light effects with images.(4 images) Resize images, Upscale, downscale & resample. (2 images)	3,4	04
12.		Use of different effects & Filter tool. Create a background for any theme. (1 background)	3,4	08
		Develop a story Board /mood board for theme based collection.(2 Boards).		
13.	All	Complete a micro project based on guidelines provided in Sr. No 11	1 to 4	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Use of tools ,software's and apps available	10
b.	Designing of patterns/ Developing images	40
c.	Color combinations	20
d.	Presentations technique used	20
e.	Regularity and timely completion	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Illustrator (Software)	1,2,3,4,5,6,7,8
2	Photoshop (Software)	9,10,11,12,13

7.THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare Brochure for boutique using an adobe Photoshop/illustrator.
- Design an advertisement poster of boutique for print media.
- Create 3 D text for digital advertisement.
- Edit photos through designing software.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Use Flash/Animations to explain various components and its application..
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should *not exceed three*.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes)

.Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare one Photo Collage by using any free app or open source.
- b. Design Personal Website.
- c. Develop Instagram Posts giving a social message.
- d. Develop Images for websites and blogs.
- e. Develop motion graphic design animated logos, advertisement, banners.
- f. Develop an environmental graphic design like signage, retail store interiors, office branding.
- g. create a you tube channel and design a cover image for it.

12.SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Adobe Illustrator CC Classroom in a Book	Author -Brian wood Publisher- Adobe	ISBN-10: 013526216X ISBN-13: 978-0135262160
2	Adobe Photoshop Classroom in a Book	Author-Andrew Faulkner ,Conard Chave Publisher- Adobe	ISBN-10: 0136447996 ISBN-13: 978-0136447993
3	MODEDESIGN - Digital Zeichnen mit Adobe Illustrator	Author-Dimitri Jelezky Publisher-paperback	ISBN-10: 3945549124 ISBN-13: 978-3945549124





13. SOFTWARE/LEARNING WEBSITES

- 1.<https://www.lifewire.com/photoshop-4781551>
- 2.<http://www.textiledesigning.org>
- 3.<https://www.guru99.com/photoshop-tutorials.html>
- 4.<https://www.elegantthemes.com/blog/design/best-adobe-illustrator-tutorials>
- 5.<https://www.youtube.com/watch?v=IBouhf4seWQ>
- 6.<https://www.youtube.com/watch?v=aZOVmljqtsc>
7. <https://www.youtube.com/watch?v=ISRSKuiMaN0>
8. <https://www.youtube.com/watch?v=GbEstmeVWVc>
9. <https://www.youtube.com/watch?v=fLhmNoo06xY>
10. <https://www.youtube.com/watch?v=8oSB-X4vUb8>
11. https://www.youtube.com/watch?v=Bh4_w1-eGCA
12. https://www.youtube.com/watch?v=h-E2x_clIyc&t=1s
13. <https://www.youtube.com/watch?v=8Z9V6Orlkm>
14. <https://www.youtube.com/watch?v=0NqwbxFGiAg>
15. <https://www.youtube.com/watch?v=YycxaAK2MZ4>
16. <https://www.youtube.com/watch?v=gfHp3LCapJA>
17. <https://www.youtube.com/watch?v=HdSaxRtNxAM>
18. <https://www.youtube.com/watch?v=ZGzfK6fapmA>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	3	-	-	2
CO2	3	-	-	3	-	-	2
CO3	3	-	-	3	-	-	2
CO4	3	-	2	2	-	-	2

	PSO1	PSO2
CO1	3	-
CO2	3	-
CO3	3	-
CO4	3	-

Sign:  Name: Mrs. C. M. Ambikar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanjure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Apparel Manufacturing Technology
Course Code	DD3102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
L	T	P	C	Theory		Practical		Total Marks	
				ESE	PA	*ESE	PA		
02	00	06	08	Marks	40	10	100	50	200
				Exam Duration	2 Hrs	1/2Hr	--	--	

(*):PE (/Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In fashion industry there is a rapid growth for women's wear sector. Knowledge of drafting, cutting and stitching of women's wear garment is very important. This course provides the students to create decision allied to sound reasoning of stylized Indian and Western line garments especially for women. This course will also help student in acquiring industry manufacturing skills in accuracy and perfection for developing of women's wear garments

3. COMPETENCY

The aim of this course is to help the students to attain apparel industry identified competency through teaching learning technique.

- **Develop commercial pattern for women's wear through innovative Apparel Manufacturing Technology.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Classify the structure of Apparel Manufacturing Industry
2. Analyze the Selection Methods used for Apparel Industry.
3. Determine various manufacturing Pattern Drafting and Pattern Grading methods .
4. Evaluate Fabric inspection system .
5. Apply Apparel Manufacturing drafting , cutting and sewing methods

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	¼ Drafting of choli,layout and cost sheet of choli	5	06
2.		Full scale drafting and cutting of choli	5	06
3.		Stitching and finishing of choli	5	06
4.	2	¼ Drafting of kameez layout and cost sheet of kameez	5	06
5.		Full scale drafting and cutting of kameez	5	06
6.		Stitching and finishing of kameez	5	06
7.		¼ Drafting of salwar layout and cost sheet of salwar	5	06
8.		Full scale drafting and cutting of salwar	5	06
9.		Stitching and finishing of salwar	5	06
10.	3	¼ Drafting of Camisole ,layout and cost sheet of camisole	5	06
11.		Full scale drafting and cutting of camisole	5	06
12.		Stitching and finishing of camisole	5	08
13.	4	¼ Drafting of Ladies Shirt ,layout and cost sheet of Ladies Shirt or T-shirt	5	06
14.		Full scale drafting and cutting of Ladies Shirt or T-shirt	5	06
15.		Stitching and finishing of Ladies Shirt or T-shirt	5	06
16.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	04
Total Hrs				96

Sr.No.	Performance Indicators	Weightage in %
a.	Set up drafting, cutting and stitching materials.	20
b.	Handling of tools and machines during performing practical	20
c.	Follow Safety measures	20
d.	Accuracy in performance	20
e.	Submission in time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Measuring tools-measuring tape, scale, French curve Tracing tools-Tracing wheel, tracing paper, yellow croban	1,2,4,5,7,8,10,11,13, and14
2	Marking tools-Tailors chalk	1,2,4,5,7,8,10,11,13, and14
3	Cutting tools-Scissor, knotcher	1,2,4,5,7,8,10,11,13, and14
4	Sewing tools-Needle, Bobbin and bobbin case, needle clamp, thread, fabric sewing machine.	3,6,9,12, and16
5	Finishing tools- Iron	3,6,9,12, and 16
6	Stationary such as –pencil, erase, brown paper, practical book	1 to 16

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to Apparel Manufacturing Industry (10hrs ,10 marks)	
1a. Classify Apparel industry Structure. 1b. Enlist the functions of Merchandising Department. 1c. Importance of Sample Department 1d. Summarize the process of CAD Section. 1e. State the role of finishing department. 1f. Describe Quality Assurance Functions.	1.1 Introduction to Apparel Industry. 1.1.1 Apparel Industry structure 1.2 Various Department in Apparel Industry 1.2.1 Merchandising Department 1.2.2 Sampling Department 1.2.3 Fabric Sourcing department 1.2.4 Purchasing Department 1.2.5 Fabric Inspection Department 1.2.6 Accessory Stores Department 1.2.7 Production Planning Department 1.2.8 CAD Section 1.2.9 Cutting Section 1.2.10 Production Department 1.2.11 Embroidery and Fabric washing section 1.1.12 Finishing Department

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	1.1.13 Quality Assurance Department
UNIT 2 Selection Methods of Garments In Apparel Manufacturing (10hrs ,12 marks)	
2a. Define the term Harmonised System. 2b. Classify Harmonised System. 2c. Select appropriate raw material for apparel sector. 2d. Determine the various fabric characteristics.	2.1 Harmonised System 2.1.1 Classification and Categories of Apparel Under Harmonised System. 2.2 Raw Material for Apparel Manufacturing 2.2.1 Fibre Selection in apparel Manufacturing 2.3 Fabric Characteristics for Apparel Manufacturing 2.3.1 Style Characteristics 2.3.2 Hand Characteristics 2.3.3 Visual Characteristics 2.3.4 Utility Characteristics 2.3.5 Transmission Characteristics 2.3.6 Transformation Characteristics 2.3.7 Durability Characteristics
UNIT 3 Manufacturing Pattern Methods (08hrs, 10 marks)	
3a. Enlist various types of paper pattern. 3b. Explain the Principles of Pattern Drafting. 3c. Elaborate the steps of paper drafting. 3d. State the merits and demerits of commercial pattern. 3e. Distinguish between Pattern Drafting and Pattern Grading.	3.1 Types of paper Pattern 3.2 Principles of Pattern Drafting 3.2.1 Steps in Paper Drafting 3.2.2 Advantages of Paper Pattern 3.3 Flat Pattern Technique 3.4 Commercial Pattern 3.4.1 Merits and Demerits of commercial Pattern 3.5 Pattern Grading 3.5.1 Types of Grading System
UNIT 4 Fabric Inspection Systems (04hrs,08 marks)	
4a. State the importance of Fabric inspection systems. 4b. Summarized four point system. 4c. Describe Ten point system. 4d. Explain Dallas System.	4.1 Fabric Inspection Systems 4.1.1 Four Point System 4.1.2 Ten Point System 4.1.3 Graniteville “78” System 4.1.4 Dallas System

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
1	Introduction to Apparel Manufacturing Industry	10	02	04	04	10
2	Selection Methods of Garments In Apparel Manufacturing	10	04	04	04	12
3	Manufacturing Pattern Methods	08	02	04	04	10
4	Fabric Inspection Systems	04	02	02	04	08
Total		32	10	14	16	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Search information about up-coming Brands and Designers in Fashion Industry.
- Collect information of latest Runways and Garment Fairs and prepare charts of the same.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with power plant system and equipments.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and its application.
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes). Each student will have to maintain activity chart consisting of individual contribution in the

project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare casual wear T-Shirt drafting using CAD.
- b. Prepare journals based on choli , salwar, kameez, camisole, shirt and T-shirt practical performed in laboratory.
- c. Prepare swatch book for women wear collection.
- d. Prepare Flow-charts for the camisole garment construction.
- e. Report writing on online/offline survey of knit wear industry.
- f. Prepare visit report on industrial survey of knit wear.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition, Year of publication	ISBN Number
1	Fashion Studies	Prof. Kripal Mathur NCERT-Publisher 1 st Edition,2014year	ISBN:10003200000012
2	Zarapkar system of cutting	Zarapkar K.R, Navneet Education (India) Limited Publishers,Bombay2014	ISBN:9788124301999
3	Metric pattern cutting for women's wear	Winifred Aldrich Publisher: John Wiley and Sons Ltd, Black paper	ISBN: 978-81-219-2318-7


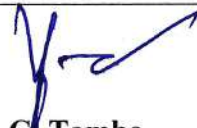


13. SOFSOFTWARE/LEARNING WEBSITES

1. cbseacademic.nic.in
2. fibre2fashion.com

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	2	2	-	-	2
CO2	3	-	2	2	-	-	2
CO3	3	3	2	2	-	-	2
CO4	1	-	-	3	-	-	2
CO5	2	1	1	1	1	1	2

	PSO1	PSO2
CO1	3	-
CO2	3	-
CO3	3	-
CO4	3	-
CO5	3	3

Sign:  Name: Mrs. N. V. Gondane (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Industry Manufacturing Technology
Course Code	DD3103
Prerequisite course code and name	DD1102 Manufacturing Technology
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory		Practical		Total Marks
L	T	P	C	ESE	PA	*ESE	PA	
04	00	04	08	Marks	80	20	50	50
				Exam Duration	3 Hrs	1 Hr	--	--

(*):PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In fashion industry there is a rapid growth for Men's wear sector. Knowledge of drafting, cutting and stitching of men's wear garment is very important. This course provides the students to create decision allied to sound reasoning of stylized Indian and Western line garments especially for Men. This course will also help student in acquiring industry manufacturing skills in accuracy and perfection for developing of men's wear garments.

3. COMPETENCY

The aim of this course is to help the students to attain apparel industry identified competency through teaching learning technique.

- **Develop commercial pattern for Men's Wear through industry manufacturing methods.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

- 1.Estimate the utilization of fabric while cutting .
- 2.Discriminate the Garment Production System.
- 3.Classify flow process grid and charts.
- 4.Apply Production Planning and Control Methods.
- 5.Adopt the Apparel Industry Manufacturing Documentation.
- 6.Evaluate the Production Capacity of Apparel Industry.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1.	Full scale drafting and cutting of waist coat	1,2,4	06
2.		Stitching and finishing of waist coat	1,2,4	08
3.	2.	Full scale drafting and cutting of Blazer	1,2,4	08
4.		Stitching and finishing of Blazer	1,2,4	08
5.	3.	Full scale drafting and cutting of Sherwani	1,2,4	08
6.		Stitching and finishing of Sherwani	1,2,4	08
7.	4.	Full scale drafting and cutting of Trouser/Jodhpuri breeches/Dhoti(any one)	1,2,4	08
8.		Stitching and finishing of Trouser/Jodhpuri breeches/Dhoti(any one)	1,2,4	06
9.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 6	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Set up drafting, cutting and stitching materials.	20
b.	Handling of tools and machines during performing practical	20
c.	Follow Safety measures	20
d.	Accuracy in performance	20
e.	Submission in time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Measuring tools-measuring tape, scale, French curve Tracing tools-Tracing wheel, tracing paper, yellow croban	1 to 9
2	Marking tools-Tailors chalk	1 to 9
3	Cutting tools-Scissor, knotcher	1 to 9
4	Sewing tools-Needle, Bobbin and bobbin case, needle clamp, thread, fabric, sewing machine	1 to 9
5	Finishing tools- Iron	1 to 9

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
SECTION-I	
UNIT 1. Fabric Utilization in Cutting Room(12hrs, 14marks)	
1a.Enlist the cutting methods. 1b.Differentiate the Manual roll and Automatic roll methods. 1c.Describe the performance parameters in cutting section.	1.1 Methods of Cutting Fabric 1.1.1 Manual cutting method 1.1.2 Computerized cutting method 1.2 Roll Allocation 1.2.1 Manual roll allocation method 1.2.2 Automatic roll allocation method 1.2.3 Important consideration in roll allocation 1.3 Performance measurement parameters in cutting section 1.3.1 Material Productivity 1.3.2 Marker Efficiency 1.3.3 Marked Consumption 1.3.4 Achieved Consumption 1.3.5 Fabric Utilization 1.3.6 Cut Order Plan
UNIT 2 Garment Production Systems (12hrs, 14marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
.List out the types of Garment Production System. 2b.State the features of Group System. 2cMention the advantages and disadvantages of Whole Garment Production System. 2d.Explain Assembly Line System.	2.1 Group System:Section or Process System 2.1.1 Features of Group System 2.1.2 Advantages and Disadvantages 2.2Whole Garment Production system 2.2.1 Features of whole garment production system 2.2.2 Advantages and Disadvantages 2.3 Modular Production System 2.3.1 Features of modular production System 2.3.2 Advantages and Disadvantages 2.4 Assembly Line System 2.4.1 Features of Assembly Line System
UNIT 3 Flow Process Grid (10hrs, 12marks)	
3a.Illustrate Flow Process Grid and Charts. 3b.Compare Flow process Grid and Flow Process Chart. 3c.State the benefit of Operation Breakdown. 3d.Ellaborate Operation Breakdown and SMV of a Trouser	3.1Flow Process Grid and Charts 3.1.1 Differences between Flow process Grid and Flow Process Chart. 3.2Construction of flow Process Grids 3.3Operation Breakdown 3.3.1 Benifit of Breakdown 3.3.2 Calculation of Operation Breakdown 3.3.3 Operation Breakdown and SMV of a Trouser
SECTION-II	
UNIT 4 PPC-In Apparel Industry (10hrs, 14marks)	
4a.Discuss the importance of PPC in apparel industry. 4b.Focus various manufacturing strategy. 4c.Measure mass customization. 4dState the role of PPC department.	4.1Production Planing and Control 4.1.1 Production Strategies in Apparel Industry 4.2 Flexible Manufacturing Strategy 4.3 Value-Added Manufacturing Strategy 4.4 Mass Customization 4.5 Role of PPC Department in Garment Industry 4.5.1 Task Scheduling 4.5.2 Line Planning 4.5.3 Follow-up and Execution 4.6 Performance Parameters of PPC
UNIT 5 Forms and Documents (10hrs, 14marks)	
5a.Enlist various forms and documents used in apparel industry. 5b.Distinguish between Production order and Purchase order document. 5c.Prepare sales tally form. 5d.Discriminate the purpose of Shipping Memo. 5e.Differentiate Receiving Memo and Rejection Memo.	5.1Production Order(PO) 5.2Bill of Materials(BOM) 5.3 Specfication Sheet/Tech Pack 5.4 Order Status Report 5.5 Purchase Order 5.6 Sales Tally Form 5.7 Receiving Memo 5.8 Shipping Memo 5.9 Rejection Memo 5.10 Invoice or Bill

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 6 Estimation of Production Capacity (10hrs, 12marks)	
6a.Evaluate the Calculation of Factory capacity(in Hours). 6b.Discriminate the calculation of product SAM . 6c.Summarize factory average efficiency. 6d.Estimate Production Capacity(in pieces).	6.1Calculation of Factory capacity(in Hours) 6.2Calculation of Product SAM 6.3Factory Average Efficiency 6.4Calculation of Production Capacity(in pieces)

8. SUGGESTED SPECIFICATION TABLE FORQUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section-I						
I	Fabric Utilization in Cutting Room	12	06	04	04	14
II	Garment Production Systems	12	06	04	04	14
III	Flow Process Grid	10	04	04	04	12
Section-II						
IV	PPC-In Apparel Industry	10	06	04	04	14
V	Forms and Documents	10	06	04	04	14
VI	Estimation of Production Capacity	10	04	04	04	12
Total		64	32	24	24	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Search information about up-coming Brands and Designers in Fashion Industry.
- b. Collect information of latest Runways and Garment Fairs and prepare charts of the same.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the

- development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
 - d. Guide student(s) in undertaking micro-projects.
 - e. Correlate subtopics with power plant system and equipments.
 - f. Use proper equivalent analogy to explain different concepts.
 - g. Use Flash/Animations to explain various components, operation and its application.
 - h. Teacher should ask the students to go through instruction and Technical manuals .

11. SUGGESTED MICRO-PROJECTS

Only for Class Declaration Courses)

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In the first four semesters, the micro-projects are group-based. However, in the fifth and sixth semesters, it should preferably be **individually** undertaken to build up the skill and confidence in every student to become a problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain a dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than **16 (sixteen) student engagement hours** during the course. The student ought to submit the micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare journals based on waist coat, blazer, sherwani, and dhoti practical performed in laboratory by using CAD method.
- b. Prepare flat sketch of waist coat, blazer, sherwani, and dhoti practical performed in laboratory.
- c. Prepare Flow-charts for blazer construction.
- d. Prepare swatch book for men wear collection.
- e. Prepare report of market survey of men wear fabric suppliers.
- f. Prepare a collage of 5 national designer collections for men's wear.
- g. Prepare a collage of 5 international designer collections for men's wear.
- h. Prepare display chart on types of accessories (actual samples) used for Indian bride.
- i. Power Point Presentation on costumes of Indian wedding collection by group of two/three students. (Duration: 10 minutes)
- j. Do the collection of adhesive material used for men's wear garments.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1.	Fashion Studies	NCERT-Publisher 1 st Edition,2018	ISBN:10003200000012
2.	Metric pattern cutting for men's wear	Winifred Aldrich Black paper	ISBN: 978-81-219-2318-7
3.	Zarapkar system of cutting	Zarapkar K.R, Sale Publishers,Bombay-2014	ISBN:9788124301999





13. SOFTWARE/LEARNING WEBSITES

1. cbseacademic.nic.in
2. fibre2fashion.com

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	2	2	-	-	2
CO2	3	-	2	2	-	-	2
CO3	3	3	2	2	-	-	2
CO4	1	-	-	3	-	-	2
CO5	1	-	-	-	-	-	2
CO6	1	-	-	-	-	-	2

	PSO1	PSO2
CO1	3	-
CO2	1	-
CO3	2	-
CO4	2	-
CO5	-	-
CO6	-	-

Sign:  Name: Ms. N. V. Gondane (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Illustration Techniques
Course Code	DD 3104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
			C		ESE	PA	*ESE	PA	
00	00	04	04	Marks	--	--	50	50	100
				Exam Duration	--	--	--	--	

(*): **PE –(Practical Examination) Legends:** L- lecture, T- Tutorial, P- practical, C- Credits, ESE- End semester examination, PA- Progressive Assessment (Test I, II/Term Work),*- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course develop the skill of illustrating stylize poses, emphasize on three dimensional draping and clothing composition. It also gives exposure to overcome abnormalities by creating optical illusion .It helps to bring out the unique characteristics of designing in order to create Seasonal design collection.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Implement the knowledge of design elements to various figure types.**

4. COURSE OUTCOMES (COs)

The practical experiences associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Illustrate proportionate fashion figure using blocking and weight distribution.
2. Drape on dress form to manipulate fabric in to three dimensional silhouettes.
3. Apply Suitable color combination and backdrop
4. Illustrate figure types and select suitable silhouettes, optical illusion to overcome abnormalities.
5. Select texture and color scheme suitable to seasonal wear.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Human Anatomy- Illustrate 2 Male 2 Female and 2 Children (Toddlers, Teenager) Stylized Figure (Study Stylization of face, arms, legs)	1	06
2.		Illustrate Male, Female and Kids fashion Figure (one each-develop your own unique style)	1	04
3.		Sketch Blocking of female figure various profile(Front view, Rare view, Side view and ¾ view) with weight distribution-S,Z,X	1	04
4.	2.	Live Sketching – Drape –Sketch -Render Drape-Plain fabric(Chiffon, Georgette, Crepe) and Printed fabric (Plaid/Linear/Abstract/Allover Print) Sketch- Garment details, Silhouette, Length, Fold, Pleat, Gathers, Shadow, etc. Render-Using Suitable Media	2,3	04
5.		Drape-Knit Fabric Sketch- Garment details, Silhouette, Length, Fold, Pleat, Gathers, Shadow, etc. Render-Using Suitable Media	2,3	04
6.		Drape-Woven(Brocade) Sketch- Garment details, Silhouette, Length, Fold, Pleat, Gathers, Shadow, etc. Render-Using Suitable Media	2,3	04
7.		Drape-Non Woven Sketch- Garment details, Silhouette, Length, Fold, Pleat, Gathers, Shadow, etc. Render-Using Suitable Media	2,3	04
8.		3	Silhouette- Draw Types of silhouette with their features. Straight, Triangular, Trapeze, Oval, Ample, High Waist line, Low Waist line.	3,4
9.	4.	Optical Illusion-Select appropriate color, texture, print, lines to create illusion Illustrate and Render Structural Design for Tall and Thin Figure, Tall and Stout Figure.	3,4	06
10.		Illustrate and Render Structural Design for Short and Stout Figure, Short and Thin.	3,4	06
11.	5	Seasonal Wear- Textural Experiment with mixed Media Illustrate and Render (Men/Women/Kid) Croquis mixed with flat for Spring Wear with proper page composition and Backdrop using suitable texture and accessories.	3,5	04

12.		Illustrate and Render (Men/Women/Kid) Croquie mixed with flat for Summer Wear with proper page composition and Backdrop Using Suitable Texture and Accessories.	3,5	02
13.		Illustrate and Render (Men/Women/Kid) Croquie mixed with flat for Autumn Wear with proper page composition and Backdrop Using Suitable Texture and Accessories.	3,5	04
14.		Illustrate and Render (Men/Women/Kid) Croquie mixed with flat for Winter Wear with proper page composition and Backdrop Using Suitable Texture and Accessories.	3,5	04
15.	All	Complete a micro project based on guidelines provided in Sr. No.11	1 to 5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Illustration	20
b.	Design Development	30
c.	Render with suitable Colors Combination.	20
d.	Page Composition and Presentation	20
e.	Completion of Work and Neatness	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Drawing Table and Drawing Board	1-15
2	Stationery Material-Drawing Sheets	1-15
3.	Colouring Material-Poster Color, Staddlers, Markers, etc	1-15

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record

physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- a. Create 3D fashion Illustration using unexpected object.
- b. Prepare Collage of any one garment category using magazine cutouts
- c. Illustrate Erect Figure and design Five garments using optical Illusion.
- d. Collect online trendy silhouette and prepare presentation with detail Silhouette name and information
- e. Develop E-Source book/library formation based on seasonal texture with market survey
- f. Draw a Bird Eye View and Worm Eye view of any Object/Accessories.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO PROJECTS-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Collect and paste photographs /magazine cutouts of Tops and Skirts suitable for heavy waist and wide hips.
- b. Collect and paste photographs / magazine cutouts of trousers for heavy legs defects.
- c. Collect and paste photographs / magazine cutouts of dresses for wide shoulder and narrow shoulder.
- d. Make a collage of different dresses from the magazine and catalogues.Paste it neatly on a sheet, identify its silhouette and name it.

e. Make a collage of different dresses from the magazine and catalogues. Paste it neatly on a one side of a sheet. Draw figure type (Figure defects) and match the suitable silhouette that overcomes the abnormalities.

f. Make a collage of different dresses from the magazine and catalogues. Paste it neatly on a one side of a sheet. Draw figure type (Figure defects) and match the suitable silhouette that overcomes the abnormalities.

1. Heavy Abdomen
2. Large Bust
3. Small Bust

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Sketch Book	Author-Bina Abling Publisher-Bloomsbery Academics 2012	ISBN-10: 1501310135, ISBN-13: 9781501310133
2	Figure draping for fashion design	Elisabetta Druid & Tisana pact. Publisher-pepin press-2011	ISBN-13:97809054961505
3	The art of fashion Illustration	Author-Irina V Ivanova Publisher-Rockport Publishers,Csm edition (1 April 2015)	ISBN-10:1631590138 ISBN-13: 978-1631590139
4	101 Textures In colored Pencil	Author-Denise J. Howard Publisher- Walter Foster	ISBN-13: 978-1633223400 Digital Edition-978-1633226548
5	A Programmed Manual –Art Principle in Clothing	Author-Edith Pankowski Publisher- MacMillan Company 1972	ISBN-10:0023906804 ISBN-13:978-0023906800
6	The Triumph of individual Style: A guide to dressing Your body, Your Beauty, Your Self	Author-Carla Mason Mathis and Helen Villa Connor Publisher-Timeless Edition 1 st Edition (March 1 1993)	ISBN-10:0963222309 ISBN-13:978-0963222305





13. SOFTWARE/LEARNING WEBSITES

1. Draping Technique-<https://youtu.be/-Hrigrvg4RA>
2. Technical Flats -<https://youtu.be/tqY3YRP-aUQ>
3. Croquie- <https://youtu.be/B0tCRiYL4o0>
4. Illustartion- <http://youtu.be/ZjDODI3jN00>
5. Illustartion- <https://youtu.be/Ncyz5w-AwEI>
6. Garment Silhoutte-https://youtu.be/_F5hLsYM-DU
7. Draping-<https://www.youtube.com/watch?v=pWHdLFbMeik>
8. www.pinterest.com
9. www.wikihow.com

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	-	-	-	2
CO2	2	-	-	-	-	-	3
CO3	2	-	-	-	-	-	3
CO4	1	2	2	-	-	-	2
CO5	1	-	-	-	2	-	3

	PSO1	PSO2
CO1	-	1
CO2	-	2
CO3	-	-
CO4	1	3
CO5	3	3

Sign:  Name: Mrs. P.V. Toshniwal (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Advance Illustration Techniques
Course Code	DD3105
Prerequisite course code and name	DD 2103 Fashion Drawing
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
L	T	P	C	Theory		Practical		Total Marks	
				ESE	PA	*ESE	PA		
00	00	04	04	Marks	--	--	100	50	150
				Exam Duration	--	--	--	--	

(*): PE –(Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course explores the skill of quick sketching proportionate fashion figure. It develops the knowledge of wardrobe designing by applying principle of design. It also help to develop consumer profile and concept boards based on standards of fashion industries.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Apply principle of design to create customized garments.**

4. COURSE OUTCOMES (COs)

The practical experiences associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Create fashion sketch using quick techniques
2. Analyze principle of design and apply it to garment line.
3. Develop a client profile based on market research
4. Design wardrobe by using suitable media and technique.
5. Develop relevant concept boards with technical aspects.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1.	Constructing Fashion Figure- Draw and render Five croquies using Quick Sketch/Free Hand Sketch Technique	1,2	04
2.		Draw and render Stick Figure Five Croquies	1,2	04
3.		Draw and render One Stroke painting six Croquies	1,2	04
4.	2.	Principles of Design- Design and Render a Garment using principle of Design- Unity/Harmony	1,2	02
5.		Design and Render a Garment using principle of Design- Balance	1,2	02
6.		Design and Render a Garment using principle of Design- Emphasis	1,2	02
7.		Design and Render a Garment using principle of Design- Proportion	1,2	02
8.		Design and Render a Garment using principle of Design- Rhythm	1,2	02
8.	3.	Client Profile – (Manual/Computerized) Design a Male, Female and Kid client profile (Photograph, Name, Age, Gender, Demographic, Occupation, Life Style, Hobbies, Likes, Dislikes, etc.)	3,4	02
9.	4.	Wardrobe Designing- (Select any one Client from unit no III) Design and render Casual Wear using Suitable Media, Surface ornamentation, Accessories and Page Composition.	3,4	04
10.		Design and render Office Wear using Suitable Media, Accessories and Page Composition.	3,4	04
11.		Design and render Beachwear using Suitable Media, Accessories and Page Composition.	3,4	02
12.		Design and render Bridal/Groom/Party Wear using Suitable Media, Surface ornamentation, Accessories and Page Composition.	3,4	04
13.		Design and render Sports Wear using Suitable Media, Surface ornamentation, Accessories and Page Composition.	3,4	04
14.		Design and render Evening Wear using Suitable Media, Surface ornamentation, Accessories and Page Composition.	3,4	04
15.		Design and render Night Wear using Suitable Media, Print, Accessories and Page Composition.	3,4	04
16.		Design and render Traditional Wear using Suitable Media, Surface ornamentation, Accessories and Page Composition.	3,4	04
17.	5.	Concept Board-	4,5	02

		(Refer Any Two design from Unit no IV) Draw Technical Flats Manually /Computerized.		
18.		Prepare Technical Spec Sheet Manually /Computerized.	4,5	02
19.		Prepare Cost Sheet Manually /Computerized.	4,5	02
20.	All	Complete a micro project based on guidelines provided in Sr. No.11	1 to 5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Illustration	20
b.	Design Development (Manually/Computerized)	25
c.	Render with suitable Colors Combination. (Manually/Computerized)	25
d.	Page Composition and Presentation (Manually/Computerized)	20
e.	Completion of Work and Neatness	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Drawing Table and Drawing Board	1-20
2	Stationery Material-Drawing Sheets	1-20
3.	Colouring Material-Poster Color, Staddlers, Markers, etc	1-20

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN - NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- Analyze the different figure type and design suitable garment line.
- Study and Prepare a concept boards for any fashion label.
- Prepare a E-Journal for collection of various garment categories.
- Report writing on Principles of Design and its importance in designing.
- Prepare a Cost sheet of Indian garment and western garment.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO PROJECTS-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Casual wear.
- b. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Formal wear.
- c. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Indian wear.
- d. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Western wear.
- e. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Indo- western wear.

f. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Sports wear.

g. Prepare a success story report and design principles of existing fashion categorized brands and do library formation of successful styles and highlight its special features that make the style successful-Night wear/Leisure wear.

h. Collect the advertise media used for Evening Wear recognized brand .

i. Collect the banner media used for Traditional Wear recognized brand.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Illustration	Author- Anna kiper	ISBN-13:978-0715336182 ISBN-10:0715336185
2	Fashion Illustration Technique.	Author-Zeshu Takama Publication -year _ 2012	ISBN-13:9781592537952 ISBN-10:1592537952
3	The Fashion sketchpad	Author-Tamar Daniel Publication -chronicle books-2013	ISBN-13:9780811877886
4	Fashion sketchbook	Author-Bina Abling 6 TH edition -2012 Publication-fair child books and visuals	ISBN-13:9781609012281
5	Fashion Illustration School	Author-Carol .A .Nunnelly. Publication-Thames and Hudson-2009	ISBN-13:978-0500287989 ISBN-10:0500287988





13. SOFTWARE/LEARNING WEBSITES

1. Fashion Illustartion- <https://youtu.be/U68FvwHaOoE>
2. Fashion Croquie- <https://youtu.be/YpibEOJGM0c>
3. Principles of Design-<https://youtu.be/ZDcd5PdrttQ>
4. Customer Profile- <https://www.youtube.com/watch?v=KfofqHU3u54>
5. Wadrobe Planning - <https://www.youtube.com/watch?v=UTL5c-2d9ao>
6. Concept Board- <https://www.youtube.com/watch?v=EwikHulIB40>
7. Cost Sheet- <https://www.youtube.com/watch?v=q8mkVvaluei0>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	-	-	-	-	-	3
CO2	2	2	2	-	1	-	3
CO3	2	-	-	-	-	-	3
CO4	3	2	2	2	2	1	2
CO5	2	-	-	-	1	2	3

	PSO1	PSO2
CO1	-	-
CO2	3	3
CO3	1	3
CO4	3	3
CO5	2	3

Sign:  Name: Mrs. P.V. Toshniwal (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB'– Scheme

Programme	Diplôma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fashion Merchandising
Course Code	DD3106
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEMES

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		ESE	PA	ESE	PA	
				Marks	80	20	-	-	100
04	00	00	04	Exam Duration	3 Hrs	1 Hr	-	-	

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination. Each Lecture/Practical period is of one clock hour.

2. RATIONALE

The course fashion merchandizing gives information about the responsibilities of fashion buying and merchandizing and also provides guidelines for effective fashion buying and merchandizing practice. The course stimulates the interest and encourage regarding the profession in order to obtain broader point of view.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Select appropriate merchandise by evaluating geographic, psychographics, and behavior of consumer.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Define fashion terminology.
2. Explain principles of fashion.
3. Perceive fashion cycle and fashion business level.
4. Evaluate geographic, psychographics, and behavior through market segmentation.
5. Identify the role and responsibilities of fashion professionals.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. THE NATURE OF FASHION (hrs 10,marks10)	
1a. Define Fad. 1b. Define Knock Off 1c. Define Fashion. 1d. Define Fashion Coordinator. 1e. Define Fashion merchandiser.	1.1 Definition of Fashion 1.1.2The terminology of fashion a) Fad b) Style c) Design d) Classic e) Trend f) Brand g) Knock-off h) Fashion Image i) Fashion Innovators j) Fashion coordinator k) Boutique l) Pret-a-Porter m) Haute Couture n) Apparel Buyers o) Chic p) Collection q)Consumer r) Custom Made s) Entrepreneur t) Fashion Merchandizing u) Sample-Garment v) Warranty w) Guarantee.
UNIT 2 COMPONENTS AND PRINCIPLES (hrs.12,marks16)	
2a. Enlist the Components of fashion. 2c. Give Key aspects of merchandizing. 2d. State types of merchandizing. 2e.Explain the Principles of fashion.	2.1 Components of fashion 2.2 Principles of fashion 2.3 Concept and Key aspects of merchandizing. 2.4 Types of merchandizing.
UNIT 3 THE MOVEMENT OF FASHION (hrs 14,marks20)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
3a.Explain Fashion cycle with appropriate diagram. 3b. Differentiate between Long and Short run fashion. 3c State Intangibles of fashion. 3d. Explain the movement of fashion with appropriate example.	3.1 The fashion cycle 3.2 Length of Fashion Cycle 3.3 Breaks in the Fashion Cycle 3.4 Long and Short run fashion 3.5 Intangibles of fashion
UNIT 4 THE ENVIRONMENT OF FASHION (hrs 10,marks12)	
4a. State the impact of Psychographic segmentation on fashion movement. 4b. Explain the demographic segmentation of fashion. 4c. Explain the psychological attitudes of consumers. 4d. State sociological characteristics of the class structure.	4.1 Market segmentation- 4.1.1 Geographic segmentation 4.1.2 Demographic segmentation. 4.1.3 Psychographic segmentation 4.1.4 Behavior segmentation. 4.2 The degree of economic development and well-being of a country of society. 4.3 The sociological characteristics of the class structure. 4.4 The psychological attitudes of consumers.
UNIT 5 THEORIES OF FASHION (hrs 10,marks12)	
5a.Define upward theory of fashion. 5b.Define Birth of Fashion.. 5c. Explain the role of retailers in fashion. 5d.Draw the diagram of fashion theory. 5e.Explain the role of fashion leaders and fashion followers.	5.1 Theories of Fashion adoption 5.1.1 Upward- Theory 5.1.2 Downward- Theory 5.1.3 Horizontal- Theory 5.2 Role of- 5.2.1 Fashion merchandiser 5.2.2 Fashion Leaders 5.2.3 Fashion followers 5.2.4 Designers 5.2.5 Manufacturer 5.2.6 Retailer 5.3 Birth of Fashion
Unit 6 THE BUSINESS OF FASHION (hrs 08,marks10)	
6a. Distinguish between Primary level fashion business and Secondary level fashion business. 6b. Enlist the levels for fashion business. 6c. State the importance of retail and auxiliary level fashion business.	6.1 Scope of the fashion business and its levels:- 6.1.1 Primary level 6.2.2 Secondary level 6.3.3 Retail level 6.4.4 Auxiliary level 6.2 Concept, contents, use and Layout of Tec pack.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	The Nature of Fashion	10	04	02	04	10
II	Components and principles	12	06	04	06	16
III	The Movement of Fashion	14	05	10	05	20
IV	The environment of Fashion	10	03	04	05	12
V	Theories of Fashion adoption	10	03	04	05	12
VI	The business of fashion	08	02	04	04	10
Total		64	23	28	29	80

9. SUGGESTED STUDENT ACTIVITIES

Other than class room and laboratory activities following are the suggested guided co curricular student's activities which need to be undertaken to facilitate the attainment of various course outcomes of this course. The students are required to maintain portfolio of their experiences which he/ she will submit at the end of the term.

- Visit and analyze inventory planning and maintenance techniques used in any brand fashion store.
- Conduct Market survey to identify the roles and responsibilities of merchandiser in fashion store.
- Conduct Market survey to identify the current fashion trends and their stages of fashion cycle.(any three product)
- Using market segmentation technique, identify various brands satisfying consumer needs and write a report on any one brand and its policies.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with automation.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and its application.
- Teacher should ask the students to go through instruction and Technical manuals
- Market Survey
- Expert lecture
- Show PPTs on above topics

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Buying and Merchandizing	Sidney Packard ,Fairchild books,1983year	ISBN:0870054457
2	Retail Buying	Diamond J.,Pearson,2000year	ISBN:0130254320
3	Fairchild Dictionary of Fashion	C.Calasibetta , Fairchild books,2003 YEAR	ISBN:1563672359
4	Fashion from Concept to Consumer	Frings Gini Stephens, Pearson/prentice Hall,2005year	ISBN:0131173383
5	The Dynamics of Fashion	Elaine Stone Fairchild books,2018year	ISBN:15011324004


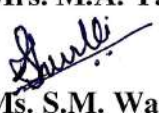
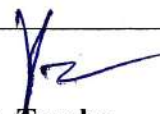


13. SOFTWARE/LEARNING WEBSITES

- 1.Apparel Clothing Manufacturing
- 2.https://en.wikipedia.org/wiki/Textile_manufacturing
- 3.<https://textilelearner.blogspot.com/2012/02/textile-manufacturing-process-process.html>

14. PO /PSO-COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	2	2	2	1	-	3
CO2	2	2	2	2	-	-	2
CO3	2	3	3	2	3	-	2
CO4	2	2	-	1	3	2	2
CO5	1	2	2	-	-	-	1

	PSO1	PSO2
CO1	3	2
CO2	2	2
CO3	3	3
CO4	-	2
CO5	-	1

Sign:  Name: Mrs. M.A. Yadav Sign:  Name: Ms. S.M. Waghchaure (Course-Expert)	Sign:  Name: Mr. V.G. Tambe (Head of Department)
Sign:  Name: Mr. V.G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diplôma Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Color Theory
Course Code	DD 3107
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
			C		ESE	PA	ESE	PA	
				Marks	80	20	--	--	100
04	00	00	04	Exam Duration	03Hrs	01Hrs	--	--	

(*):(POE Practical & Oral Examination-NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of various color terminologies and theories, this further accelerates in developing various effective color schemes for designing fashion products.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Invent and apply different color schemes for fashion products.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Infer elements and dimensions of colors.
2. Interpret creative color composition.
3. Apply various color harmonies for developing color schemes.
4. Invent color harmonies for fashion products.
5. Organize color palettes for fashion products.

5. **SUGGESTED PRACTICALS/ EXERCISES**
NA
6. **MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED**
NA
7. **THEORY COMPONENTS**

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to Colors (08 hrs,08 marks)	
1a. State the formation of color. 1b. Explain elements of colors. 1c. Enlist color mixing techniques. 1d. Understand the basics of color.	1.1 Color Physics (Newton, 1676) - A triangular prism disperses white sunlight into a spectrum of colors (rainbow). 1.1.1 Human eye by brain generates the colors 1.1.2 Lights generates the colors 1.2 Elements of colors 1.2.1 Hue (Color) 1.2.2 Value (Intensity of Tone) 1.2.3 Saturation (Croma) 1.2.4 Temperature: The warmth and coolness of hue 1.3 Techniques of Mixing of Colors 1.3.1 The additive Colors 1.3.2 The subtractive Colors 1.3.3 The Partitive Colors 1.4 Basics of Colors 1.4.1 Tint 1.4.2 Shade 1.4.3 Tone 1.4.4 Neutral
UNIT 2. Dimensions of Colors (08hrs,08marks)	
2a. Explain the use of Color Palette. 2b. List various mediums of coloring. 2c. State the types of color wheel. 2d. Render the step by step process of Grey Scale.	2.1 Color Palette 2.2 Various mediums of coloring 2.2.1 Pencil colors 2.2.2 Charcoal colors 2.2.3 Crayons 2.2.4 Oil based and water soluble colors 2.2.5 Inks and pens 2.2.6 Markers etc. 2.3 Color Wheel (18 parts)- History of Color Wheel 2.3.1 Types of Color Wheel- The Pigment Wheel (Primary Colors, Secondary Colors, Tertiary Colors, Quaternary Colors) and The Process Wheel 2.4 Grey scale of 9 steps
UNIT 3. Creative composition by colors (12hrs, 16marks)	
3a. Explain the Gestalt's Law. 3b. State the Principles of design for colors. 3c. Explain the variation of contrast.	3.1 Gestalt's Law 3.1.1 Principles of Gestalt law 3.1.2 Description with illustration the principles of Gestalt Laws 3.2 Principal of Design for Colors

3d. Implement contrast color scheme.	3.2.1 Rhythm 3.2.2 Balance 3.2.3 Proportion and Scale 3.2.4 Emphasis 3.2.5 Repetition 3.2.6 Contrast, etc. 3.3 Variation of Contrast 3.3.1 Hue Contrast 3.3.2 Value Contrast 3.3.3 Cold and warm contrast 3.3.4 Complementary Contrast 3.3.5 Simultaneous Contrast 3.3.6 Chroma Contrast (Saturation, purity, intensity of color) 3.3.7 Contrast of Extension (Area, size, proportion)
UNIT 4. Color Harmony (12hrs, 16marks)	
4a. Explain Itten's color theory. 4b. State Ostwald's color harmony. 4c. Describe Munsell's color harmony. 4d. Explain Analogous and Polychromatic Color harmonies.	4.1 Itten's Color Theory 4.1.1 Dyads 4.1.2 Triads 4.1.3 Tetrads 4.1.4 Hexads 4.2 Ostwald's Color Harmony 4.2.1 Monochromatic harmony- Equal whites, Equal blacks and The shadow series 4.2.2 Two-hue & multicolor harmonies- Complementary pairs in equal white and black, Transverse Complementary pairs, Non Complementary pairs and Three-hue harmony 4.3 Munsell's Color Harmony 4.3.1 Vertical harmony 4.3.2 Interior harmony 4.3.3 Circular harmony 4.3.4 Oblique harmony 4.3.5 Oblique side harmony 4.3.6 Spinal harmony 4.4 Summary of Color Theorists 'Approaches 4.4.1 Equal whites and equal blacks color schemes 4.4.2 Analogous color schemes 4.4.3 Polychromatic colors united by neutral
UNIT 5. Theory of Color Impression (12hrs, 16marks)	
5a. State the color effects in nature. 5b. Explain the Majestic Cycle of Nature. 5c. Enlist three different Intensities of Light. 5d. Describe the advantages and disadvantages of metsmerisum.	5.1 Color effects in nature 5.2 Majestic Cycle of Nature 5.2.1 Spring 5.2.2 Summer 5.2.3 Autumn 5.2.4 Winter 5.2.5 Color Forecasting techniques 5.3 Three different Intensities of Light 5.3.1 Medium light 5.3.2 Full light 5.3.3 Shadow 5.4 Pantone color system for printing

	Metamerism in Colorimetry
UNIT 6. Discovering Colors (12hrs, 16marks)	
6a. State the role of colors in Colorimetry. 6b. Explain effects of colors on psychology of human being. 6c. Describe the Color Sphere and Color Star. 6d. Enlist the use of Colors in products and packaging design.	6.1 Effects of colors 6.1.1 Psychological effect of colors 6.1.2 Spatial effect of colors 6.1.3 Symbolization of colors 6.1.4 Enhancing visual appearance 6.1.5 Obstructing visual continuity 6.1.6 Attracting attention 6.1.7 Creating contrast or blend 6.1.8 Softening or hardening of forms 6.1.9 Evoking emotional response 6.2 The Color Sphere (Philipp Otto Runge) & The Color Star 6.2.1 Symmetrical shape with six parallels and 12 meridians. 6.2.2 Colors construction by means of the Color sphere- The pure prismatic hues located on the equator of the spherical surface, All mixture of the prismatic hues with white and black are on the surface, The mixtures of complementary pair are in a horizontal section, The mixture of any complementary pair, tinted and shaded towards white and black, as represented in the corresponding vertical section. 6.3 Use of Colors in Products and Packaging Design 6.3.1 The Four F's: First impressions, Form, Function, and Fashion.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Colors	08	04	02	02	08
II	Dimensions of Colors	08	04	02	02	08
III	Creative composition by colors	12	08	03	05	16
IV	Color Harmony	12	08	02	06	16
V	Theory of Color Impression	12	08	03	05	16
VI	Discovering Colors	12	06	02	08	16
Total		64	38	14	28	80

9. SUGGESTED STUDENT ACTIVITIES:

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record **physical evidences for their** (student's) portfolio which will be useful for their placement interviews:

- A field visit to retail stores, market places etc. to understand use of colors in product development.
- Plan a market survey and report writing to analyze impact of colors on consumer selection of product.
- Collect information and pictures of the colors used in fabrics, apparels and jewelry of prehistoric period.
- Make a Color wheel, Color schemes etc. using digital medias.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any) :

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with automation.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and its application.
- Teacher should ask the students to go through instruction and Technical manuals
- Teacher should plan field visits, market surveys etc.

11. SUGGESTED MICRO-PROJECTS:

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	The Elements Of Colour	Johannes Itten, Van Nostrand Reinhold Company, New York, Cincinnati, Toronto, London, Melbourne	ISBN :0-442-24038-4
2	Elements of Design Rediscovering Colours, Textures, Forms & Shapes	Loan Oei, Thames & Hudson Ltd., London	ISBN:9780500383394
3	The Art of Colour & Design	Matland Graves, McGraw hill Book Co., New York	ISBN:9781635618914
4	Creative Composition & Design	Pat Dews, North Light books, Ohio	ISBN:9781440317361





13. SOFTWARE/LEARNING WEBSITES

1. https://monoskop.org/images/4/46/Itten_Johannes_The_Elements_of_Color.pdf
2. <http://dsource.in/sites/default/files/course/visual-design-colour-theory/downloads/file/visual-design-colour-theory.pdf>
3. <http://www.cs.kent.edu/~svirdi/Ebook/wdp/ch07.pdf>
4. https://lfhs.lfcisd.net/UserFiles/Servers/Server_904/File/ECCastillo/Color%20Theory%20Worksheet.pdf

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	1	-	-	-	-	-
CO2	1	-	-	-	-	-	-
CO3	2	1	1	-	-	-	-
CO4	2	-	2	-	-	-	-
CO5	2	1	2	-	-	-	-

	PSO1	PSO2
CO1	2	3
CO2	3	1
CO3	2	2
CO4	2	2
CO5	3	3

Sign:  Name: Mrs. S. N. Shinde (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB'– Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Textile Science - II
Course Code	DD3108
Prerequisite course code and name	DD2101 Textile Science - I
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
				Theory		Practical		Total Marks	
L	T	P	C	ESE	PA	ESE	PA		
				Marks	80	20	--	--	100
04	00	00	04	Exam Duration	3 Hrs	1 Hr	--	--	

(*): OE/POE (Oral Examination/Practical & Oral Examination NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course is to understand varieties of fabric using various innovative weaves to get an overview of textiles which are produced in the textile industry used for garments. It also focuses on characteristics of different woven, knitted, nonwoven fabrics and finishes, dyes and printing techniques to resolve the garment manufacturing problems.

3. COMPETENCY

The aim of this course is to help the students to attain the following competency through various learning teaching experiences-

- **Interpret relevant techniques for finishing of given fabrics or garment and use various fabrics to garment manufacturing.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Identify durability of fabric by studying its construction.
2. Select relevant knitting fabric
3. Use appropriate finishing techniques to enhance fabric appearance
4. Use nonwoven fabrics to develop relevant garment.
5. Apply various printing and finishing technique on garment.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. FABRIC CONSTRUCTION(12hrs, 15marks)	
1a.State origin of loom. 1b.Explain operation of conventional loom 1c. Give difference between shuttle loom and shuttle less loom.	1.1 Loom 1.1.1 Origin of Loom 1.1.2 Conventional shuttle loom:- Operation and principal parts 1.2 Types of Loom 1.2.1 Shuttle Loom. 1.2.2 Shuttle less Loom. 1.2.3 Power loom.
UNIT 2 WEAVE AND LOOP FORMATION (12hrs, 15marks)	
2a. Draw the structure of plain weave. 2b Enlist the uses of rib weave. 2c. Enlist the types of twill weave. 2d. State the difference between satin and sateen weave. 2e. Define knitting. Enlist its types. 2f. Give types of knitting. 2g. State the advantage of knitting.	2.1 Weaves:-Structure, Appearance, Durability and Uses– 2.1.1 Plain Weave 2.1.2 Matt Weave 2.1.3 Rib Weave 2.1.4 Twill Weave – Warp faced and Weft faced 2.1.5 Satin Weave 2.1.6 Sateen Weave 2.1.7 Decorative weave – Dobby 2.2 Knitting- 2.2.1Origin 2.2.2Types 2.2.3 Construction 2.2.4 Advantages and Disadvantages

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 3 NON-WOVEN AND DECORATIVE FABRIC FORMATION (06hrs, 08marks)	
3a. List the types of non-woven fabrics. 3b. State the uses of felted fabric. 3c. State the disadvantages of non-woven fabric. 3d. Give steps of construction of felted fabric.	3.1 Felted and Bonded Fabric- 3.1.1 Construction 3.1.2 Types 3.1.3 Uses 3.1.4 Advantages and Disadvantages 3.2 Jacquard Fabric- 3.1.1 Construction 3.1.2 Types 3.1.3 Uses 3.1.4 Advantages and Disadvantages
UNIT 4 DYEING AND PRINTING (14hrs, 20marks)	
4a. State the advantages of natural dyes. 4b. State the purpose of animal dyes. 4c. Give the process of roller printing. 4d. Explain the process of screen printing.	4.1 Natural Dyes :-Classification, purposes, Advantages and Disadvantages 4.1.1 Vegetable Dyes 4.1.2 Animal Dyes 4.1.3 Mineral Dyes 4.1.4 Synthetic / Manmade dyes 4.2 Textile Printing 4.2.1 Roller printing 4.2.2 Direct printing 4.2.3 Discharge printing 4.2.4 Duplex printing 4.2.5 Block Printing 4.2.6 Digital and Screen Printing
UNIT 5 FINISHES (10hrs,12marks)	
5a. List the purpose of textile finishes. 5b. Draw classification chart of finishes used for fabric. 5c. Give the uses of calendaring and napping. 5d. Explain sanforizing and weighting.	5.1 Finishes –Classification and purpose 5.2 Mechanical Finishes- 5.2.1 Beetling 5.2.3 Brushing & Shearing 5.2.4 Calendaring 5.2.5 Teetering 5.2.6 Moireing 5.2.7 Embossing 5.2.8 Glazing 5.2.9 Napping 5.2.10 Weighting 5.2.11 Sizing 5.2.12 Sanforizing 5.2.13 Schreinerling 5.2.14 Crape Effect

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	5.2.15 Smooth finish.
Unit –VI FABRIC STUDY (10hrs,10marks)	
6a. Give classification of fabric with example. 6b. Give features and uses of fabrics. 6c. Enlist types of natural fabrics	6.1 Classification of Fabrics 6.1.1 Natural Fabric 6.1.2 Synthetic Fabric 6.2 Types of fabrics and their features 6.2.1 Cotton Fabrics 6.2.2 Polyester Fabric 6.2.3 Linen Fabric 6.2.4 Silk 6.2.5 Denim 6.2.6 Velvet 6.2.7 Jersey Fabric 6.2.8 Georgette Fabric. 6.2.9 Pile Fabric

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Fabric Construction	12	04	03	15	15
II	Weave and loop formation	12	03	02	15	15
III	Non-woven and decorative fabric formation	06	02	03	08	08
IV	Dyeing and Printing	14	05	05	20	20
V	Finishes	10	03	04	12	12
VI	Fabric Study	10	02	04	04	10
Total		64	40	19	21	80

9. SUGGESTED STUDENT ACTIVITIES:

Other than class room and laboratory activities following are the suggested guided co curricular student's activities which need to be undertaken to facilitate the attainment of various course outcomes of this course. The students are required to maintain portfolio of their experiences which he/ she will submit at the end of the term.

- Visit to textile mill
- Analyze the specifications, costs, quality and availability for various types of fabrics in local market.
- Make a collection of different types of fabric swatches.
- Prepare a chart of classification of fabric and their features.
- Prepare classification chart of finishes used for fabric.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES:

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Demonstration method
- j. Arrange field visits
- k. Identification of printing machines and equipment available recently in the market make comparison chart for the costing of the same.

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fiber to Fabric	Bernard P. Carbman, N. Yoris MGH	ISBN:0-07-013137-6
2	Text Book of Clothing ,Textile and Laundry	N. Delhi Kalyani, Gupta Sushma	-----
3	Fashion Production Terms	Debble Ann Gioello and Beverly Berke, , Fairchild publications	ISBN:0870052004 ISBN:9780870052002
4	Fundamentals of Textile and Textile Design	Meller Susan,Hydrabad orient longmar Focal press N.Y.	-----
5	Guide to Clothing	Theodora Failola Priest	-----

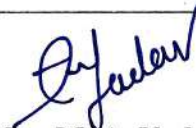


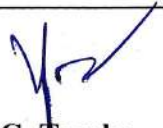
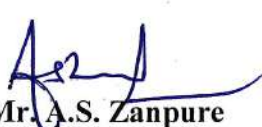
13. SOFTWARE/LEARNING WEBSITES

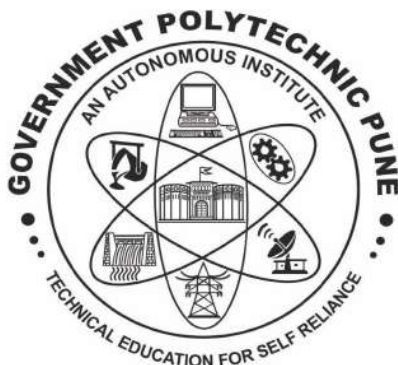
- 1.Apparel Clothing Manufacturing
- 2.https://en.wikipedia.org/wiki/Textile_manufacturing
- 3 <https://textilelearner.blogspot.com/2012/02/textile-manufacturing-process-process.html>
4. <https://www.aanyalinen.com/blogs/aanya-blog/types-of-fabrics>
- 5.http://dl.booktolearn.com/ebooks2/clothing/9781780673349_fabric_for_fashion_be24.pdf

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	1	2	-	-
CO2	3	-	1	1	-	-	1
CO3	3	1	-	2	2	-	1
CO4	3	-	-	1	1	-	1
CO5	3	1	1	3	2	-	1

	PSO1	PSO2
CO1	3	1
CO2	2	1
CO3	1	2
CO4	1	-
CO5	3	2

Sign:  Name: Mrs. M. A. Yadav Sign:  Name: Ms. S. M. Waghchaure (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)



Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing

LEVEL-4(A)- Auxiliary Courses

SR. NO.	COURSE CODE	COURSE NAME
1	AU 4101	Environmental Science@
2	AU 4102	Renewable Energy Technologies
3	AU 4103	Engineering Economics
4	AU 4104	Ethical Sources and Sustainability
5	AU4105	Digital Marketing

LEVEL-4(B)- Management Level Courses

SR. NO.	COURSE CODE	COURSE NAME
1	MA 4101	Entrepreneurship & Startups @
2	MA 4102	Industrial Organization & Management
3	MA 4103	Materials Management
4	MA 4104	Disaster Management
5	MA 4105	Introduction to E-commerce
6	MA 4106	Information Management

LEVEL-4(C) Applied Technology Courses (ALL COMPULSARY)

SR. NO.	COURSE CODE	COURSE NAME
1	DD-4101	Industry Inplant Training
2	DD-4102	Project
3	DD-4103	Seminar
4	DD- 4104	Appreciation of Indian Costumes
5	DD-4105	Appreciation of World Costumes
6	DD-4106	Portfolio Development
7	DD-4107	Digital Design Studio
8	DD-4108	Surface Techniques
9	DD-4109	Draping Techniques

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in /CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Environmental science
Course Code	AU4101
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory		Practical		
L	T	P	C	ESE	PA	ESE	PA	
-	-	02	02	Marks	--	--	50	50
				Exam Duration	--	--		

(*): OE/POE (Oral Examination/Practical & Oral Examination- NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This is an interdisciplinary course, introduced with an aim to create awareness about environmental issues among the diploma students. The rate Industrialization and Urbanization is very fast, and the country/world is facing the issues like draught, flood, deforestation, increase in earth temperature, pollution and depletion of resources. In view of this the management of resources' and dilution of pollutants is of prime need to keep the environment safe and clean.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **To create environmental awareness for sustainable development.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Create awareness for conservation of natural resources and preserving the Environment.
2. Perform/Contribute in sustainable development.
3. Undertake preventive measures to control different pollutions.
4. Differentiate between Conventional and Non-conventional energy sources.
5. Identify the role of SPCB/CPCB and EPA in Environment protection

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	UNIT No	Practical Exercises (Outcomes in Psychomotor Domain)	RelevantCO	Approximate Hours Required.
1.	NA	Visit to “Kachara Depot (dumping yard) and write a report.	1, 3,5	04*
2.		Identify the Environmental issues and group discussion on the efforts made to increase public awareness and prepare a Report.	1,2,3	04*
3.		Assignment/Report on ecosystem and its components.	2	02
4.		Expert lecture on Role of NGOs and Government in Conserving Environment and write a report on it.	2,3,5	04
5.		Visit to a local area -Environmental assets such as river /forest / grassland / hill / mountain and writing report on it.	1,3	04
6.		Activity based on – “Best out of Waste” (use of waste paper, Plastic, glass bottles, clothe, scrap.)	3	02*
7.		Video Demonstration /Expert Lecture Report on Climate Change and Global warming.	1,2,3, 4,5	02
8.		Write a report on E-waste - 1. Describing E-waste and its type. 2. State its impact/hazards on environment. 3. State importance of E-waste disposal and disposal methods. 4. Comments on how E-waste is handled globally. (Role play can be enacted by each group representing different countries) 5. Description of how India handles e-waste. (Role play can be enacted by a group)	1,2,3	04
9.		Visit to nearby site, using nonconventional energy source (e.g., solar/wind)	4	04
10.		Visit to nearby Poly house and write a report. (Product, financial assistance, limitations, difficulties in operating, any other related information)	2	04
11.		Individual Presentation on Environmental issues and his/her Contribution towards Environment.	12,3, 4,5	04*
12.		Write an assignment on Green House effect, carbon Footprint, carbon trading.	2,3,4	02
13.		Assignment on disposal of medical waste. (To study Incineration.)	3	02

14.		Identify the issues related to the programmes in the institute and write the report. (Here disciplinary or interdisciplinary activity can be carried out)	2,3	04*
15.	NA	Write an assignment on role of Ministry of Environment and Forest Organizational Structure (MOEF) and Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB), Environment Protection Act.	5	04*
16		Complete a micro project based on guidelines provided in Sr.no. 11	1 to 5	04*
Total Hrs.				32

Practical marked with* are compulsory.

Sr.No.	Performance Indicators	Weightage in %
a.	Observation, collection, and analysis of data	40
b.	Preparation of report	30
c.	Interpretation of result/ observation and conclusion	10
d.	Answer to questions	10
e.	Submission of report in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

The curriculum is activity based. It is expected from teacher to explain to students the scientific theory behind each assignment.

For e. g. - The assignment stating best out of waste does not mean to make only Decorative items from the waste.

In this case it is expected to explain the concept of 4R I.e., reduce, reuse, recycle, and reproduce.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

NA

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In the first four semesters, the micro-project is group-based. However, in the fifth and sixth semesters, it should be preferably be **individually** undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The student ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare a report on visit to PUC Center.
- b. Visit a nearby RO plant and prepare detail technical report.
- c. Prepare report on Household water filtration unit
- d. Prepare a list of polluted natural resources which are responsible for pollution and collect information on how to damage them.
- e. Collection of Data from Hospital: Collect everyday information on percentage of solid hazardous and toxic waste for two months
- f. Visit of Municipal Effluent Treatment Plant: Visit effluent treatment plant and prepare report on waste management.
- g. Visit of Water Treatment Plant: Visit water treatment plant and prepare report on various units of water treatment and its management.
- h. Preparation of report: Prepare the chart of solid waste management showing effects on environment.
- i. Suggest the remedial measures for the control of pollution of local water source by conduct relevant study
- j. Undertake the Impact study of vehicular pollution on environment.
- k. Visit to "Kachara Depot, (dumping yard) and analyze the waste.
- l. Write a report on "Best out of Waste.
- m. Write a report on Green House effect,
- n. Study of air quality of Pune city.
- o. Study of noise pollution in Pune city.
- p. Study of solid waste management of Pune city.
- q. Study of E-waste management of Pune city.
- r. Study of Environmental Status Report of Pune city prepared by Pune Municipal Corporation.
- s. And any other relevant topic related to course

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1.	Basic Civil and Environmental Engineering	S.P. Nisture, D. A. Joshi, G.S.Chhawsaria, Pearson	978-1282531819
2.	Basics of Environmental Studies	Anindita Basak, D.L. Manjunath, Pearson	978-8131756072
3.	Global Warming the Hard Science	L.D.Danny Harvey Pearson	978-8131733318
4.	Environmental Studies	Benny Joseph, Tata McGraw Hill	978-9352605170
5.	Renewable Energy	Godfrey Boyle, Oxford Publications	0199261784, 9780199261789
6.	Environmental studies	R. Rajagopalan, Oxford University Press	9780199459759

13. SOFTWARE/LEARNING WEBSITES

1. www.nptel.com
2. <http://www.mpcb.gov.in/>
3. <http://www.cpcb.nic.in/>
4. <http://www.envfor.nic.in/>
5. <http://www.neeri.res.in/>


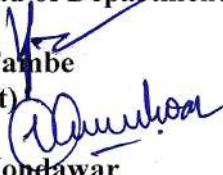


14. PO/PSO - COMPETENCY- CO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	1	2	1	3	1	3
CO2	1	1	2	1	3	1	3
CO3	1	1	2	2	2	1	3
CO4	1	1	2	1	2	1	3
CO5	1	1	2	1	2	1	3

CO	PSO1	PSO2
CO1	--	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	--	--

List of Experts &Faculties Who Contributed for This Curriculum:

Sr.No.	Name	Designation	Institute / Industry
1.	DR. SMS Shashidhara.	Chairman PBOS	Head Civil Engg. Dept. GOVT. POLYTECHNIC, PUNE
2	Shri. Sanjay Deshpande.	Director, Sanjivani Development	Industry person
3.	Mrs.M.U.Kokate	Faculty from Institute	Head IT. Dept. GOVT. POLYTECHNIC, PUNE
4	Mrs.Seema V.Kolhe	Faculty from Institute	Lecturer in Civil Engg. GOVT. POLYTECHNIC, PUNE
5	Shri .M.K.Panchawate	Faculty from Institute	Lecturer in Civil Engg. GOVT. POLYTECHNIC, PUNE
6	Mrs. P.M.Zilpe	Faculty from Institute	Lecturer in Electronics Engg. GOVT. POLYTECHNIC, PUNE
7	Mrs. S.S.Chhatwani .	Faculty from Institute	Lecturer in Electronics Engg. GOVT. POLYTECHNIC, PUNE
8	Mrs. M. H. Bilgi	Faculty from Institute	Lecturer in Electrical Engg. GOVT. POLYTECHNIC, Pune

<p>Sign:</p> <p>Name: Mrs. S.V. Kolhe</p>  <p>Mr. M.K. Panchawate (Course Experts)</p>	<p>Sign:</p> <p>Name: Dr. S. M. S. Shashidhara (Former Head of Department)</p>  <p>Name: Mr. V. G. Tambe (HOD I Shift)</p> <p>Name: Mr. V. B. Kondawar (HOD II shift)</p>
<p>Sign:</p>  <p>Name: Mr. V. G. Tambe (Program Head of Department)</p>	<p>Sign:</p>  <p>Name: Mr. A. S. Zanpure (CDC)</p>

Government Polytechnic, Pune

'180 OB'– Scheme

Programme	Diploma in ET/CE/EE//ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Renewable Energy Technologies
Course Code	AU4102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks	
L	T	P		Theory		Practical			
			C		#ESE	PA	ESE	PA	
				Marks	40	10	--	--	50
02	00	00	02	Exam Duration	2Hrs	1/2Hr	--	--	

(*): OE/POE (Oral Examination/Practical & Oral Examination NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Electrical energy is an important aspect in all sectors of economic growth of India. Considering the continuously increased demand of electrical energy, the conventional sources of energy are insufficient to meet these demands and hence the use of renewable sources of energy is the need of the hour. Hence these sources must be known to electrical technicians. This course consists of construction, working principle, operation and applications of Solar, Wind, Biomass, Geothermal and Tidal power plants.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- Practice of non-conventional energy as power source in electric field. Operate and maintain small Solar plants, Wind power stations, Geothermal plants etc.

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Know the national scenario of energy production, utilization, consumption and reserves and need of non conventional energy sources.
2. Describe construction, working principle, operation and applications of Solar power panel.
3. Describe construction, working principle, operation and applications for Wind and Biomass power plants.
4. Describe construction, working principle, operation and applications for Geothermal and Tidal energy power plants.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1: Review of Conventional Sources of Energy Hrs.- 02 Marks- 04	
1a. Classify the conventional energy sources and know their availability in India. 1b. Know the necessity of non-conventional energy sources. 1c. Describe the environmental impact of various energy sources and the need for sustainable development.	1.1 Types of conventional energy sources, Availability and important power plants in India. 1.2 India's production and reserves for Fossil fuels, Water power, Nuclear power. 1.3 Need for non-conventional energy sources. 1.4 Environmental impact of various energy sources, Green building, Sustainable development. Carbon credits and its significance.

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 2:Solar Energy and its Applications Hrs.- 12 Marks- 14	
<p>2a. Know the principle of conversion of solar energy to heat and electrical energy.</p> <p>2b. Know the concept of solar radiation and define the terms used in solar radiation geometry.</p> <p>2c. Explain the principle of electrical power generation by photovoltaic cell with merits and demerits of the system.</p> <p>2d. Identify and describe the various applications based on solar energy.</p>	<p>2.1 Principle of conversion of solar energy into heat and electrical energy, Solar radiation, Solar radiations at earth's surface.</p> <p>2.2 Solar radiation geometry: declination, hour Angle, altitude angle, incident angle, zenith angle, solar azimuth angle.</p> <p>2.3 Solar collectors and their types, Application, Advantages and Limitations.</p> <p>2.4 Solar electric power generation: Solar photovoltaic cell, Solar cell Principle and Working, Application, Advantages and Disadvantages.</p> <p>2.5 Solar water heating, Solar distillation, Solar cooking and furnace</p> <p>2.6 Solar pumping and Green house, Agriculture and industrial process heat.</p> <p>2.7 Space heating, Space cooling.</p>
UNIT 3:Wind Energy and Energy from Biomass Hrs.- 12 Marks- 14	
<p>3a. Know the principle of conversion of wind energy to electrical energy.</p> <p>3b. Describe the advantages and limitations and applications of wind energy.</p> <p>3c. Explain with sketches the working of horizontal and vertical axis wind mills.</p> <p>3d. Know the concept of obtaining energy from biomass through various methods.</p> <p>3e. Identify and describe the various types of biomass power plants.</p>	<p>3.1 Basic principles of wind energy conversion, Power in wing, Available wind power formulation, Power coefficient, and Maximum power</p> <p>3.2 Main considerations in selecting a site for wind mills, Advantages and Limitations of wind energy conversion</p> <p>3.3 Classification of windmills, Construction and working of horizontal and vertical axis wind mills and their comparison</p> <p>3.4 Main applications of wind energy for power generation and pumping</p> <p>3.5 Common species recommended for biomass, methods for obtaining energy from biomass</p> <p>3.6 Classification of biomass: Gasified, Fixed bed and Fluidized</p> <p>3.7 Application of gasifier</p> <p>3.8 Biodiesel production and application</p> <p>3.9 Agricultural waste as biomass, Biomass digester, Comparison of biomass with conventional fuels</p>
UNIT 4: Geothermal and Tidal Energy Hrs.- 06 Marks- 08	
<p>4a. Know the principle of generation of energy from geothermal and tidal source.</p> <p>4b. Identify and describe the various methods of generation of energy from geothermal and tidal source.</p>	<p>4.1 Availability, Forms of geothermal energy: Dry steam, Wet steam, Hot dry rock, Magnetic chamber system</p> <p>4.2 Different geothermal power plants available.</p> <p>4.3 Tidal power, Factors for selection of tidal power plant.</p> <p>4.4 Classification: Single basin, Double basin type.</p> <p>4.5 Tidal power plants in world, Ocean thermal plants</p>

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Review of Conventional Sources of Energy	02	04	-	-	04
II	Solar Energy and its Applications	12	04	04	06	14
III	Wind Energy and Energy from Biomass	12	04	04	06	14
IV	Geothermal Energy and Tidal Energy	06	02	02	04	08
Total		32	14	10	16	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a) To collect information about global and Indian energy market.
- b) One field visit to be conducted to demonstrate application of Solar Energy.
- c) One field visit to be conducted to Wind Mill
- d) To visit a biomass/ biogas plant of municipal waste or elsewhere

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Correlate subtopics with power plant system and equipments.
- e. Use proper equivalent analogy to explain different concepts.
- f. Use Flash/Animations to explain various components, operation and working principle.

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title	Author, Publisher, Edition and Year of publication	ISBN No.
1	Non conventional energy resources	Dr. B.H.Khan ,Tata McGraw Hill Education, New Delhi	ISBN- 9780070681033
2	Non conventional energy resources	G. D. Rai ,Khanna publication	ISBN- 9788174090738
3	Solar Energy	Sukhatme S.P., Nayak J.K.,Tata McGraw, New Delhi	ISBN- 9781259081965
4	Solar Energy	Garg H. ,Prakash J.,McGraw Hill Education, New Delhi	ISBN- 9780074636312
5	India- The energy sector	P.H. Henderson ,Oxford University Press	ISBN- 9780195606539
6	Industrial energy conservation	D. A. Ray ,Pergaman Press	ISBN- 9780080232744

13. SOFTWARE/LEARNING WEBSITES

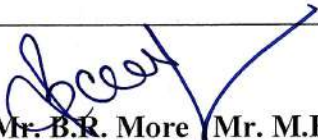
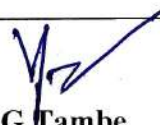



1. www.nptel.com
2. Website for AkshayUrja News Bulletin www.mnes.nic.in
- 3 . <https://www.bioenergyconsult.com/biomass-energy-systems/>
4. <https://mnre.gov.in/bio-energy>

14. PO/PSO - COMPETENCY- CO MAPPING

CO-PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	1	1	1	1	1	1
CO2	2	2	2	2	2	1	3
CO3	2	2	2	2	2	1	3
CO4	2	2	2	2	2	1	3

CO-PSO	PSO1	PSO2	PSO3	PSO4
CO1	1	-	-	-
CO2	3	2	2	3
CO3	3	2	2	3
CO4	3	2	2	3

***NOTE:-** The department who will run this course please do the PSO - competency- CO mapping according to your PSOs, as this mapping is done according to EE Engg. dept PSOs

Sign:  Name: Mr. B.R. More (Mr. M.H. Bilgi) (Course Expert /s)	Sign:  Name: Mr. V.G. Tambe (Head of Department)
Sign:  Name: Dr. S.S. Bharatkar (Program Head First Shift) (Electrical Engineering Dept.)  Mr. R.U. Shelke (Program Head Second Shift) (Electrical Engineering Dept.)	Sign:  Name: Mr. A.S. Zanpure (CDC Incharge)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in ET/CE/EE//ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Engineering Economics
Course Code	AU4103
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		#ESE	PA	ESE	PA	
02	00	00	02	Marks	40	10	--	--	50
				Exam Duration	2 Hrs	1/2Hr	--	--	

(*):*OE/POE (Oral Examination/Practical & Oral Examination -NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course aims at equipping the students with fundamental knowledge of economics and cost analysis to make them capable of taking economically sound decisions.

3. COMPETENCY

The aim of this course is to address following industry identified competency through various teaching learning experiences:

- **Ability to analyze and decide acceptance or rejection of offers / project proposals based on economic criteria.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Interpret various principles, concepts and applications of Economics in the field of Engineering and technology.
2. Analyze Market Demand.
3. Apply the principles of economics and cost analysis to proposals in engineering and Technology.
4. Read and interpret financial statements and indicators.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to Economics (06hrs, 08marks)	
1a. Define the term Economics. 1b. State the objectives and importance's of engineering Economics. 1c. Differentiate between Micro and macro economics. 1d. Describe the functions of Market economy and Command economy. 1e. List the elements of mixed economy.	1.1 Definitions of economics 1.1.2 Objectives and Importance of engineering economics. 1.1.3 Concept of engineering economics. 1.2 General concepts on micro and macro economics 1.2.1 Market economy, 1.2.2 Command economy 1.2.3 Mixed economy.
UNIT 2 Demand Analysis (06hrs, 08marks)	
2a. List the utility related demand. 2b. State the importance of total and marginal utility. 2c. Explain Law of demand. 2d. Analysis elasticity of demand. 2e. State factors governing the elasticity of demand. 2f. Enlist the techniques and methods for forecasting of demand.	2.1 Utility related demand 2.1.1 Total and marginal utility 2.1.2 Law of diminishing marginal utility 2.1.3 Cardinal and ordinal utility. 2.2 Law of demand 2.2.1 Determinants of demand 2.2.2 Elasticity of demand 2.2.3 Factors governing the elasticity of demand. 2.3 Techniques and methods for forecasting of demand

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 3 Elements of Business/Managerial Economics(12hrs, 12marks)	
3a. Define the term cost and cost control. 3b. Enlist the types of costs. 3c. Interpret the lifecycle costs. 3d. Define the term Budgets. 3e. Determine Break even analysis. 3f. Explain in brief application of Linear Programming. 3h. Importance of Time value of money. 3j. Elaborate the methods of cash flow. 3k. Evaluate the Causes of depreciation.	3.1 Cost and Cost Control –Techniques 3.1.1 Types of Costs 3.1.2 Lifecycle costs 3.1.3 Budgets 3.1.4 Break even Analysis 3.2 Capital Budgeting 3.2.1 Application of Linear Programming. 3.3 Time value of money 3.4.1 Simple and compound interest. 3.4.2 Principle of economic equivalence. 3.5 Evaluation of engineering projects and Cost-benefit 3.6. Cash flow- Methods of comparison of alternatives – present worth and future worth method (Revenue dominated cash flow diagram) 3.7 Depreciation-Causes of depreciation 3.8.1 Depreciation straight line method and declining balance method
UNIT 4 National Income, Finance and Banking (08hrs, 12 marks)	
4a. Explain Balance sheet, Book Keeping and Financial reporting. 4b. Mention measurement parameters of national income. 4c. Differentiate between Gross domestic and national production (GNP, GDP). 4d. State the functions of commercial banks and Reserve Bank of India.	4.1. Concept of profit and loss account 4.1.1 opening stock, closing stock, sales, purchases, wages, creditors, debtors, gross profit, net profit 4.2. Concept of Balance sheet, & book keeping 4.2.1. Fixed asset, Current assets, share capital, current liabilities, goodwill, debt, inventories, bill receivable, overheads and expenses. 4.3. Concepts and measurement of national income 4.4. Gross domestic and national production (GNP, GDP). 4.5 Banking- Meaning and functions of commercial banks and Reserve Bank of India.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Economics	06	02	02	04	08
II	Demand Analysis	06	02	02	04	08
III	Elements of Business/Managerial Economics	12	04	04	04	12
IV	National Income, Finance and Banking	08	02	02	08	12
Total		32	10	10	20	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a. Study of datasheet of Cash flow of a firm.
- b. Prepare charts of depreciation by taking different examples.
- c. Case Study-Prepare a comparative statement of of two Engineering projects in respect of investment and profit.(Consider Capital Investment, over head expenses, wages, net profit)
- d. Case study- Prepare a cost sheet for a small scale unit.
(In Cost sheet consider production, selling, overhead cost and profit analysis)

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application
- h. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	"Contemporary Engineering Economics",	Author-Chan S.Park, Publisher-Prentice Hall of India,2011 year.	ISBN- 9780134105598
2	"Engineering Economics and analysis"	Author-Donald.G.Newman, Publisher-Jerome.P.LavelleEngg. Press, Texas, 2010 year.	ISBN- 0824709535
3	"Engineering Economy"	Author-Degarmo, E.P., Sullivan, W.G and Canada, J.R Publisher- Macmillan, New York, 2011 year	ISBN-9780029461396
4	"Engineering Economy"	Author-Zahid A khan: Engineering Economy Publisher-Dorling Kindersley, 2012 year	ISBN-10- 8131763870 ISBN-13-978-8131763872

13. SOFTWARE/LEARNING WEBSITES-






1. <https://online.nmims.edu/>
2. <https://www.quora.com>
3. <https://www.edx.org>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	3	3	-	3	3	3
CO2	3	3	3	1	3	3	3
CO3	3	2	2	-	2	3	3
CO4	3	2	2	-	2	2	3

	PSO1	PSO2
CO1	1	1
CO2	2	2
CO3	1	-
CO4	2	2

*NOTE:-THE DEPARTMENT WHO WILL RUN THIS COURSE PLEASE DO THE PSO - COMPETENCY- CO MAPPING ACCORDING TO YOUR PSOs,AS THIS MAPPING IS DONE ACCORDING TO DDGM PSO

Sign:  Name: Mrs. C.M. Ambikar Sign:  Name: N.V. Gondane (Course-Expert)	Sign:  Name: Mr. V.G. Tambe (Head of Department)
Sign:  Name: Mr. V.G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB'– Scheme

Programme	Diplôma in ET/CE/EE//ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Ethical Sources and Sustainability
Course Code	AU4104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		#ESE	PA	ESE	PA	
				Marks	40	10	--	--	50
02	00	00	02	Exam Duration	2Hrs	1/2Hr	--	--	

(*): *OE/POE (Oral Examination/Practical & Oral Examination-NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course is aimed at creating awareness amongst the students about global level commitment towards sustainable development. The course also creates awareness on ethical manner of production, including the supply chain, the environmental and social impacts of the production process and product as well as the safety and fair deal towards the work force involved at all levels.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Adopt ethical practices and sustainable processes and products in industry.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency

1. Interprets the concept of ethical sourcing and fundamentals of Sustainability.
2. Practice Global Sustainable Development Goals (SDG).
3. Follow ethical and sustainable supply chain.
4. Differentiate traditional and sustainable manufacturing.

5. **SUGGESTED PRACTICALS/ EXERCISES**
NA
6. **MAJOR EQUIPMENT/ INSTRUMENTS REQUIRE**
NA
7. **THEORY COMPONENTS**

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. ETHICAL SOURCING (06hrs, 08marks)	
1.1 Define Ethical Sourcing. 1.2 Explain Basic Eight Principles of Ethical Sourcing. 1.3 State the laws of industrial ethics. 1.4 Explain the policies of industrial ethics.	1.1 Definition -1.1.1 Ethical Sourcing 1.2 Basic Eight Principles 1.3 Policies 1.4 Benefits -Importance of Ethics 1.5 Challenges - Causes of Unethical Behavior 1.5Laws
UNIT 2 SUSTAINABILITY (08hrs,10marks)	
2.1 Define Sustainability and Ethical Sourcing and Sustainability. 2.2 Explain the principles of sustainability. 2.3 Explain the need and challenges of environmental sustainability. 2.4 Compare Social sustainability and economic sustainability. 2.5 Explain the agenda of 2030 sustainable development goals.	2.1 Definition -2.1.1 Sustainability 2.1.2 Ethical Sourcing and Sustainability 2.2 Twelve green engineering principles. 2.3 Benefits and Challenges 2.4 Types- 2.4.1 Human Sustainability 2.4.2 Social Sustainability 2.4.3 Economic Sustainability 2.4.4 Environmental Sustainability 2.5 Introduction of Sustainable Development Goals (SDGs)= (Leaving no one behind- Global agenda for 2030- 17 goals, 169 Targets 231 Indicators) [17 Sustainable Development Goals (SDGs)]- Goal1:No Poverty Goal2:Zero Hunger Goal3:Good Health And Well-Being Goal4:Quality Education Goal5:Gender equality Goal6:Clean water and sanitation Goal7:Affordable and clean energy Goal8:Decent work and economic growth Goal9:Industry Innovation and infrastructure Goal10:Reduced in equality Goal11:Sustainable cities and communities Goal12:Responsible consumption and production Goal13:Climate action Goal14:Life below water Goal15:Life on land Goal16: Peace and justice strong institutions

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	Goal17: Partnerships to achieve the goal.
UNIT 3 ETHICAL AND SUSTAINABLE SUPPLY CHAIN (10hrs,12marks)	
3.1 State the use of three P's and E's of sustainability. 3.2 Explain the ways to reduce waste by simplifying supply chain processes with appropriate example. 3.3 Comment on existing environmental risks caused by tradition non sustainable manufacturing process. 3.4 Explain the ways decrease fossil fuel consumption by optimizing routes with appropriate example.	3.1 Three P's- 3.1.1 Profit 3.1.2 Planet 3.1.3 People 3.2 Three E's- 3.2.1 Environment 3.2.2 Equity 3.3.3 Economics 3.3 Study of Six Steps for supply- 3.3.1 Reduce waste by simplifying supply chain processes 3.3.2 Ensure ethical sourcing and introduce transparency 3.3.3 Minimize overproduction through efficient supply and demand planning 3.3.4 Decrease fossil fuel consumption by optimizing routes. 3.3.5 Fully utilize containers and transportation to consolidate shipments. 3.3.6 Monitor for existing environmental risks.
UNIT 4 MATERIALS FOR SUSTAINABILITY (08 hrs,10marks)	
4.1 Explain the impact of material selection over environment. 4.2 Explain the factors to be considered for material selection to optimize performance. 4.3 Explain Life cycle assessment with appropriate example. 4.4 Give a note on "Production of green manufacturing materials" with appropriate example. 4.5 Explain the role of 5R's in sustainable development.	4.1 Environmental impact of materials 4.2 life-cycle assessment 4.3 Material selection to optimize performance 4.4 Design 4.5 Evaluation 4.6 Production of green manufacturing materials. 4.7 Role of 5R's for Sustainable Development- 4.7.1 Refuse / Reject 4.7.2 Reduce 4.7.3 Reuse / Repurpose / Rethink 4.7.4 Repair 4.7.5 Recycle

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Ethical Sourcing	06	4	2	2	08
II	Sustainability	08	4	2	4	10
III	Ethical And Sustainable Supply Chain	10	4	4	4	12
IV	Materials For Sustainability	08	2	4	4	10
Total		32	14	12	14	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

a. Select any topic and prepare a Power Point Presentation in a group of three to four students covering economic, social and environmental sustainability aspects and give presentation to other students and teacher. (Example- a) Green Construction Techniques, b) Sustainable Energy solutions for manufacturing, c) Recycling, d) Waste Management e) Rainwater conservation)

OR

- a. Prepare a write up in a group of three to four students and present it to other students considering Global agenda for 2030-Leaving no one behind i.e. **Sustainable Development Goals (SDGs)** and its 169 Targets 231 Indicators.
- b. **Case Study**-Prepare a comparative statement of two Engineering projects in respect to traditional and sustainable manufacturing process considering benefits and challenges.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application
- h. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Sustainable Construction Processes	Steve Goodhew , Wiley-Blackwell, 1 edition 13 April 2016	ISBN:140518759X
2.	Sustainable logistics Supply Chain Management	David.B.Grant , Kogan page 1 st edition 3 March 2015	ISBN:9780749473860
3.	Global Value Chains, Flexibility and Sustainability	Julia Connell, Renu Agarwal Sushil ,Sanjay Dhir ,09 May 2018	ISBN:978-981-10-8929-9
4.	The Handbook of Ethical Purchasing: Principles and Practice	Rob Harrison ,Routledge, 13 oct 2021	ISBN:9781032059952

13. SOFTWARE/LEARNING WEBSITES

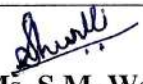


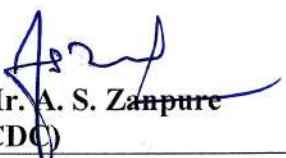
1. <https://www.ncbi.nlm.nih.gov/books/NBK64933/>
2. <http://www2.econ.iastate.edu/classes/tsc220/hallam/TypesOfSustainability.pdf>
3. <https://www.woolworthsgroup.com.au/content/Document/Ethical%20Sourcing%20Policy.pdf>
4. <https://www.supplychainbrain.com/blogs/1-think-tank/post/29477-how-to-create-a-more-ethical-and-sustainable-supply-chain>
5. <https://h2mgroup.wordpress.com/2013/06/14/the-three-es-of-sustainability/>
<https://www.cce.ufl.edu/wpcontent/uploads/2012/08/Ethics%20of%20Sustainability%20Textbook.pdf>
6. A global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development: https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review_Eng.pdf
7. Transforming our World: The 2030 Agenda for Sustainable Development United Nations, 2015-
<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	3	3	-	3	3	3
CO2	3	3	3	-	3	3	3
CO3	3	2	2	-	2	3	3
CO4	3	2	2	-	2	2	3

	PSO1	PSO2
CO1	-	-
CO2	2	2
CO3	2	2
CO4	-	-

***NOTE:-** The department who will run this course please do the PSO - competency- CO mapping according to your PSOs, as this mapping is done according to DDGM dept PSOs.

Sign:  Name: Ms. S.M. Waghchaure (Course-Expert) Name: Ms. N.V. Gondane (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Digital Marketing
Course Code	AU4105
Prerequisite course code and name	NA
Class declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		ESE	PA	\$ESE	PA	50
				Marks	--	--	25	25	
00	00	02	02	Exam Duration	--	--	--	--	

(\$): *OE(Oral Examination)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Digital marketing is advertising or promotions of products and services using digital platforms. Digital Marketing is rapidly evolving technology. And social media is ever growing marketing platform for users. The course will help students to improve skills to market their product or service in the digital media. The course will enable students to explore and create something new who wants to be a good entrepreneur or good professional in design and development.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Enhance business using various digital media channels**

4. COURSE OUTCOMES (COs)

The practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Identify advertisement sections of web pages in a website.
2. Install Google analytics on a website.
3. Use Google analytics for reading analytics data.
4. Generate reports for sample web-site
5. Use e-mail marketing tool

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No	Unit No	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	NA	Study and prepare a report of a sample web-site with strategic flow for e-commerce/publication etc. (with the use of: HTML, CSS, and JavaScript etc.)	1, 2	4
2		Set up and create account on Google Analytics and install it on a web-site. Study of Google Analytics GUI/IDE for: <ul style="list-style-type: none"> • Inbound and outbound marketing • Content marketing • Website Content optimization 	2	4
3		Study of Search Engine Optimization (SEO) using Digital marketing platform.	2	4
4		(A)Create the tracking id for web-site and track links (B) Analyze website traffic and leads using DM platform/tool	2	4
5		Read Analytics data. Read audience acquisition and behavior statistics	3	4
6		Generate different types of reports through Google Analytics	4	4
7		Study of any email marketing tool (Freeware)	5	4
8		Complete a micro project based on guidelines provided in Sr. No. 11	All Cos	4
Total Hrs				32

Sr.No.	Performance Indicators	Weightage in %
a.	Study of web pages and web site	10
b.	Installing and setting up the tool for web site	20
c.	Observations and Recording	20
d.	Interpretation of reports, result and Conclusion	20
e.	Answer to sample questions	20
f.	Submission of term work journal in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTSREQUIRED

The major tools with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major tools Required	Experiment Sr. No.
1	Web browser	All
2	Any Web Server (e.g. Glassfish, Tomcat)	
3	Google Analytics	

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of each activity.

- a. Prepare journals based on practical performed in laboratory.
- b. Study of different types of web-sites (ecommerce/ publication/ social media) and advertisements on these web-sites.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through presentations.
- c. Self-learning through Online tutorials to analyze business data
- d. Use of freeware marketing tools to check for the effectiveness for particular type of websites

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-project is group-based. However, in the fifth and sixth semesters, it should be preferably be *individually* undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should *not exceed than three*.

Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than *16 (sixteen) student engagement hours* during the course. The student ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Develop and deploy a sample web-site (using CSS, JavaScript, and similar techniques) for given sample commercial requirements. And identify advertising sections among these pages.
- b. Create blog post for educational videos for demonstrating content marketing
- c. Create an account on Google analytics and analyze traffic to the sample website
- d. Create code for tracking ID for sample web site and generate reports through Google analytics

12. SUGGESTED LEARNING RESOURCES

Sr No	Title	Author, Publisher, Edition, Year of publication	ISBN Number
1	Fundamental of digital Marketing	Punneet Singh Bhatia, Pearson India, 2 nd Edition (2019)	ISBN_109789353434141
2	The Art of SEO	Eric Enge, Stephan Spencer, Jessie Stricchiola, O'Reilly Media, 3 Edition (2015)	ISBN_10 1491948965 ISBN_13 978-1491948965

13. SOFTWARE/LEARNING WEBSITES






1. www.nptel.com
2. <https://youtu.be/mXcQ7rVn3ro>
3. <https://youtu.be/gQe7gGGuzeQ>
4. https://www.tutorialspoint.com/digital_marketing/

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	1	3	2	-	1	-
CO2	-	2	1	2	-	-	1
CO3	1	2	3	3	-	1	1
CO4	-	1	2	3	-	1	1
CO5	-	3	3	3	1	1	1
Summary	1	2	2	3	1	1	1

	PSO1	PSO2	PSO3
CO1	1	-	2
CO2	-	-	3
CO3	-	-	3
CO4	-	1	3
CO5	-	-	3

***NOTE:-** The department who will run this course please do the PSO - competency- CO mapping according to your PSOs, as this mapping is done according to IT dept PSOs.

Sign: Name: 1) Mrs. M.G. Yawalkar  2) Mrs. A.S. Paike 3) Mrs. K.S. Gaikwad 4) Mrs. P.K. Zade  (Course Expert /s)	Sign: Name: Mr. U.V. Kokate Mr. Dr. S.B. Nikam  (Head of Department) (Department of Computer Engineering)
Sign: Name: Mr. U.V. Kokate Mr. Dr. S.B. Nikam  (Programme Head) (Department of Computer Engineering)	Sign: Name:  Mr. A.S. Zanpure (CDC In-charge)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in CE/EE /CM/ME/MT/ET/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/15/16/17/18/19/21/22/23/24/26
Name of Course	Entrepreneurship and Startup
Course Code	MA 4101
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks	
				Theory		Practical			
L	T	P	C	#ESE	PA	ESE	PA		
				Marks	40	10	--	--	50
2	--	--	2	Exam Duration	2 Hrs	1/2Hr	--	--	

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Globalization, liberalization and privatization along with revolution in information technology have opened up new opportunities transforming lives of masses. In this context, there is immense opportunity of establishing manufacturing, service, trading, marketing and consultancy enterprises by diploma engineer. Our fast growing economy provides ample scope for diploma engineers to succeed as an entrepreneur. Entrepreneurship requires distinct skill sets which are attempted to be developed through this course. To begin with, this course aims to develop the competency and the related outcomes in order to start small enterprises. Government of India also motivates the young engineers to come up with new idea to promote Start ups.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop project proposals for launching small scale enterprises and starts up.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

- 1 Identify entrepreneurial traits.
- 2 Collect information from stakeholder for starting starts up
- 3 Identify support systems available for Starts up
- 4 Execute plans for managing enterprise effectively.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

The following topics/subtopics should be taught and assessed in order to develop UOs for achieving the COs to attain the identified competency.

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit-1 Introduction to Entrepreneurship Development (08 Hrs, 10 Marks)	
1a. Describe procedure to evaluate entrepreneurial traits as a career option for given product 1b. Explain given terms related to Entrepreneurship 1c. Describe salient features of the resources required for starting the specified enterprise. 1d. Identify characteristics for a given type of enterprise.	1.1 Entrepreneurship as a career 1.2 Traits of successful entrepreneur: consistency, creativity, initiative, independent decision making, assertiveness, persuasion, persistence, information seeking, handling business communication, commitment to work contract, calculated risk taking. 1.3 Entrepreneurship: scope in local and global market. 1.4 Types of enterprises and their features: manufacturing, service and trading.
Unit-2 Startup Selection Process (10 Hrs, 14 Marks)	
2a. Describe scheme(s) offered by the government for starting the specified enterprise. 2b. Suggest suitable place for setting up the specified enterprise on the basis of given data/circumstances with justification. 2c. Suggest steps for the selection process of an enterprise for the specified product or service with justification. 2d. Describe market study procedure of the specified enterprise.	2.1 Product/Service selection: Process, core competence, product/service life cycle, new product/ service development process, mortality curve, creativity and innovation in product/ service modification / development. 2.2 Process selection: Technology life cycle forms and cost of transformation, factors affecting process selection, location for an industry, material handling. 2.3 Market study procedures: questionnaire design, sampling, market survey, data analysis 2.4 Getting information from concerned stakeholders such as Maharashtra Centre for Entrepreneurship Development [MCED], National Institute for Micro, Small and Medium Enterprises [NI-MSME], Prime Minister Employment Generation Program [PMEGP], Directorate of Industries [DI], Khadi Village Industries Commission [KVIC]
Unit-3 Support System for Startup (08 Hrs, 10 Marks)	

3a. Describe support system required for the specified enterprise.	3.1 Categorization of MSME, ancillary industries
3b. Describe help provided by the government agencies for the specified product/service.	3.2 Support systems- government agencies: MCED, NI-MSME, PMEGP,DI, KVIC
3c. Describe help provided by the non-governmental agencies for the specified product/service.	3.3 Support agencies for entrepreneurship guidance, training, registration, technical consultation, technology transfer and quality control, marketing and finance.
3d. Compute breakeven point for the specified business enterprise, stating the assumptions made.	3.4 Breakeven point, return on investment and return on sales.
Unit-4 Managing Enterprise (06 Hrs, 06 Marks)	
4a. Explain key elements for the given business plan with respect to their purpose/size.	4.1 Sources of Product for Business : Feasibility study
4b. Justify USP of the given product/service from marketing point of view.	4.2 Ownership, Capital, Budgeting, Matching entrepreneur with the project , feasibility report preparation and evaluation criteria
4c. Formulate business policy for the given product/service.	4.3 Unique Selling Proposition [U.S.P.]: Identification, developing a marketing plan.
4d. Choose relevant negotiation techniques for the given product/service with justification.	4.4 Preparing strategies of handling business: policy making, negotiation and bargaining techniques.
4e. Identify risks that you may encounter for the given type of business/enterprise with justification.	4.5 Risk Management: Planning for calculated risk taking, initiation with low cost projects, integrated futuristic planning, angel investors, venture capitalist.
4f. Describe role of the incubation centre for the given product/service.	4.6 Incubation centers: Role and procedure.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to EDP	08	2	2	6	10
II	Entrepreneurial Opportunities and selection Process	10	2	4	8	14
III	Support System	08	2	4	4	10
IV	Managing Enterprise	06	2	2	2	06
Total		32	8	12	20	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Download product development and innovative films from internet.
- Invite entrepreneurs, industry officials, bankers for interaction.
- Identify your hobbies and interests and convert them into business idea.
- Convert you project work into business.

- e. Choose a product and design a unique selling proposition, brand name, logo, advertisement (print, radio, and television), jingle, packing, packaging, and label for it.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.8, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with power plant system and equipment.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and
- Teacher should ask the students to go through instruction and Technical manuals.

11. SUGGESTED MICRO-PROJECTS-

NA

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Reading Material of Entrepreneurship Awareness Camp	Gujral, Raman, Entrepreneurship Development Institute of India (EDI), GOI, 2016 Ahmedabad	ISBN: 9946302512012
2	Product Design and Manufacturing	Chitale, A K , PHI Learning, New Delhi, 2014;	ISBN: 9788120348738
3	Entrepreneurship Development Small Business Entrepreneurship	Charantimath, Poornima Pearson Education India, New Delhi	ISBN: 9788131762264
4	Entrepreneurship Development: Special edition for MSBTE	CPSC, Manila Tata Mc-Graw Hill, New Delhi	ISBN: 9789432961123
5	Entrepreneurship and Small Business Management	Khanka, S.S. S.Chand and Sons, New Delhi	ISBN: 978-93-5161-094-6




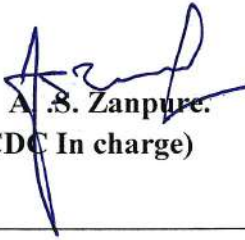
13. SOFTWARE/LEARNING WEBSITES

1. MCED Books links:
<http://www.mced.nic.in/UdyojakSpecial.aspx?linktype=Udyojak>
2. MCED Product and Plan Details: <http://www.mced.nic.in/allproduct.aspx>
3. The National Institute for Entrepreneurship and Small Business Development Publications: <http://niesbud.nic.in/Publication.html>
4. Courses : The National Institute for Entrepreneurship and Small Business Development: <http://niesbud.nic.in/docs/1standardized.pdf>
5. Entrepreneur.com: <https://www.entrepreneur.com/lists>
6. Govt. Sponsored Schemes:
<https://www.nabard.org/content1.aspx?id=23andcatid=23andmid=530>
7. NABARD - Information Centre:
<https://www.nabard.org/Tenders.aspx?cid=501andid=24>
8. NABARD – What we Do:
<http://www.nabard.org/content1.aspx?id=8andcatid=8andmid=488>
9. Market Review: <http://www.businessstoday.in/markets>
10. Start Up India:
http://www.startupindia.gov.in/pdf/file.php?title=Startup%20India%20Action%20Plan&type=Action&q=Action%20Plan.pdf&content_type=Action&submenupoint=action
11. About - Entrepreneurship Development Institute of India (EDII):
<http://www.ediindia.org/institute.html>
12. NSTEDB – Training: <http://www.nstedb.com/training/training.htm>
13. Tata Exposures: <http://www.tatasocial-in.com/project-exposure>
14. Ministry Of Micro, Small And Medium Enterprises:
<http://www.dcmsme.gov.in/schemes/TEQUPDetail.htm>
15. List of Business Ideas for Small Scale Industry:
<https://smallb.sidbi.in/%20thinking-starting-business/big-list-business-ideas-small-business>
16. Thinking of Entrepreneurship: <https://smallb.sidbi.in/entrepreneurship-stage/thinking-entrepreneurship>
17. List of services for Small Scale Industry:
http://www.archive.india.gov.in/business/Industry_services/illustrative.php
18. NSIC Schemes and Services: <http://www.nsic.co.in/SCHSERV.ASP>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	-	-	-	2	2	2
CO2	1	-	-	-	2	2	2
CO3	-	-	-	-		1	3
CO4	-	-	-	1	-	1	2

	PSO1	PSO2
CO1	-	-
CO2	-	1
CO3	-	1
CO4	-	1

<p>Sign: </p> <p>Name:- Mr. S. S. Harip (Course Expert)</p>	<p>Sign: </p> <p>Name: Dr. N. G. Kulkarni. (Head of Department)</p>
<p>Sign: </p> <p>Name: - Dr. N. G. Kulkarni. (Program Head) (Mechanical Engg Dept.)</p>	<p>Sign: </p> <p>Name: Mr. A. S. Zanpure. (CDC In charge)</p>

Government Polytechnic, Pune.

'180OB' – Scheme

Programme	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Industrial Organization and Management
Course Code	MA 4102
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
			C		#ESE	PA	ESE	PA	50
				Marks	40	10	--	--	
02	00	00	02	Exam Duration	2 Hrs	1/2Hr	--	--	

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

The industrial organization is a structured organization which has different levels of management. There are different sections / divisions of industry in which, a diploma engineer is expected to work. There are various roles of diploma engineers at different levels of technical and administration departments in an industry. They must be aware of financing agencies, Market survey, marketing techniques, human relations management and different acts by which the industries are governed.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Ability to work with various levels of management in industry, develop awareness about different departments of industry, acts by which, industries are governed, industrial ethics and leadership qualities.**

4. COURSE OUTCOMES (COs)

The theory experiences and behavioral skills associated with this course are to be taught and implemented, so the student will be able to exhibit the following CO'S.

1. Understand different levels of Industry Organization and entrepreneurship.
2. Implement skills for organizing Market Survey and Management technique.
3. Implement various Financial & Material Management technique.
4. Use the relevant acts applicable for factories .

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit-1 : Overview of Business and Organizational Management (Weightage-08, Hrs-6)	
1.a.Students can describe types of business. 1.b Students can classify types of industries. 1.c Students can describe Organizational Structure of Industry. 1.d Students can describe forms of ownerships.	1.1 Classification of Industries: Engineering, IT, ITeS Banking, Retail. Small Scale, Large Scale, Pvt. Ltd, India Ltd, Multi-National, MSME. 1.2 Role of engineer in Manufacturing, Service-sector, Trade , Consultancy. 1.3 Introduction to Types of business: Manufacturing, service, Trade, Consultancy. 1.4 definition of Organization. Types : Line, Functional, Line and staff, Project. 1.5 Authority and delegation of power at different levels of organization. 1.6 Forms of Ownerships : Proprietorship, Partnership, Joint Stock, Cooperative Society, Government Sector.
Unit-2 Fundamentals of Management (Weightage-08, Hrs-6)	
2.a Describe concept of Management. 2.b. Describe different levels of Management. 2.c Describe different functions of Management.	2.1 Definition of Management. 2.2 Role of management. 2.3 Levels of Management: Higher, Middle and Lower Level management. 2.4 Scientific management by FW Taylor. 2.5 Function of Management : Planning, Organizing, Directing, Coordinating, Controlling. 2.6.Role of Management with respect to feedback & Corrective actions.
Unit-3 Financial Management, Accounting and Material Management. (Weightage-12, Hrs-10)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
3.a . Describe different types of capital generation. 3.b Describe different types of budgets. 3.c Describe advantage of balance sheet to calculate Profit / Loss. 3.d Describe concept of Inventory management.	3.1 Overview of : Capital generation and Management, Fixed & Working Capital. 3.2 Sources of raising Capital. 3.3 Budget & Accounts : Types of Budget viz. Production budget, fixed and variable budget (concept level) 3.4 (MRP)-function of MRP, input to MRP, benefit of MRP. 3.5 Basic concepts Enterprise resource planning (ERP)-concepts, advantages and disadvantages of ERP . 3.6 Accounts : Profit & Loss accounts, rules for debits & credits, books of accounts. 3.7 Balance Sheet : definition, sample format, various fields. 3.8 Material Management : Inventory (Concept, classification, functions.), Necessity of ABC analysis. 3.9 Standard steps in purchasing. Direct Purchase , tender method, E- Tendering.
Unit-4	
Marketing, Industrial Safety and various Acts. (Weightage-12, Hrs10)	
4.a Describe the concept of Market Survey and types of survey. 4.b List different techniques of increasing sales of product. 4.c List and Describe various types of accidents in industry. 4.d List and Describe various acts with respect to industry.	4.1 Market Survey: Need, Advantages and Types of market survey. 4.2 Different techniques of increasing sales of product. 4.3 Packaging of goods. 4.4 Industrial Safety: Types of accidents in industry, Causes of accidents, Preventive measures to avoid accidents. 4.5 Industrial legislation : Indian Factory Act, Minimum Wages Act, Workmen Compensation Act. (Main provisions in the acts). 4.6 Penal actions on violation of Acts. (provisions)

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Overview of Business and Organizational Management.	06	02	06	00	08
II	Fundamentals of Management.	06	02	06	00	08
III	Financial Management, Accounting and Material Management.	10	04	06	02	12
IV	Marketing, Industrial Safety and various Acts.	10	02	06	04	12
Total		32	10	24	06	40

9. SUGGESTED STUDENT ACTIVITIES:

- a. Prepare/download information about different industrial acts.
- b. Visit to manufacturing Industry and Prepare Report on...
 - i) Structure of Organization/Department
 - ii) Safety Measures taken in Organization
 - iii) Procedure adopted for quality control
 - iv) Any Specific observation you have noticed
- c. Prepare the Technical details of 5 (Electronics Product like mobile phone, TV ,Laptop, Home Theatre, Projector etc. of different company including cost and Suggest which is cost effective to buy.
- d. Prepare Project report which includes financial Viability of any product of your choice.
- e. Prepare a questioner for market survey of electronic product of your choice.
- f. Write detailed Processes to start the Partnership firm.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

- a. To arrange a Visit to an Industry and observe industrial safety norms followed in the industry. Students should submit a report based on their observations regarding the safety norms to be followed in the industry.
- b. Arrange an Expert Lecture by a Lawyer to update the students regarding Amendments in Different acts (Factory act, Minimum Wages Act, Workmen Compensation Act) and Penal actions on violation of the acts.

11. SUGGESTED MICRO-PROJECTS:

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of Publication	ISBN Number
1	Industrial Engineering and Management.	O.P. Khanna, Dhanpat Rai and Sons	ISBN-10:818992835X
2	Project Planning and Entrepreneurship.	T.R.Banga, Indu Banga, CBS Publishers	-----
3	Behavioral Process in Organizations.	Uday Parikh, T.V. Rao and D.M. Pestonjee, Tata McGrawhill.	ISBN-13: 9788120400313




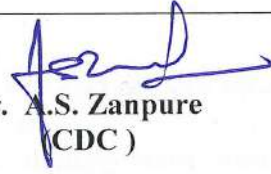
13. SOFTWARE/LEARNING WEBSITES

1. www.nptel.com
2. www.slideshare.net

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	-	-	-	2	3	2
CO2	-	-	-	-	2	3	2
CO3	-	-	-	-	1	3	2
CO4	-	-	-	-	2	3	2

	PSO1	PSO2
CO1	-	-
CO2	-	1
CO3	-	1
CO4	-	1

<p>Sign: </p> <p>Name: Mr. G.W. Sonone (Course Expert)</p>	<p>Sign: </p> <p>Name: Mr. R.N. Shikari (Head of Department)</p>
<p>Sign: </p> <p>Name: Mr. R.N. Shikari (Program Head) (Electronics & Telecommunication Dept.)</p>	<p>Sign: </p> <p>Name: Mr. A.S. Zanpure (CDC)</p>

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme Code	01/02/03/04/05/06/07/08/15/16/17/18/19/21/22/23/24/26
Name of Course	Materials Management
Course Code	MA4103
Pre-requisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
L	T	P	C	Theory		Practical		Total Marks	
				#ESE	PA	ESE	PA		
02	00	00	02	Marks	40	10	--	--	50
				Exam Duration	2Hrs	1/2Hr	--	--	--

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course deals with management of materials. Smooth running of any industry depends upon the interdepartmental relations and planning for execution of work jointly. Efficiency of the production department also depends upon the availability of raw material of required quality and quantity. Therefore there should be proper coordination between the production department, production planning, stores department and purchase department. Incorrect materials planning can also lead to higher inventories & high cost.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **To acquaint with the latest techniques in materials management and inventory management.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. State the importance of materials and inventory management.
2. Describe different aspects of buying procedure and price forecasting.
3. To acquaint with latest techniques in materials management.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENTS / INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) [In cognitive domain]	Topics and Sub-topics
Unit – 1 Importance of Materials Management (08 hrs, 10 marks)	
1.a. State needs of material management. 1.b. List the fields of material management. 1.c. State the objectives and functions of material management. 1.d. Describe methods for organization of materials 1.e. Explain importance of specifications in material management.	1.1 Growing importance of Materials Management. 1.2 Materials Management: - Scope - Objectives - Functions 1.3 Organizing for Materials Management. 1.4 Introduction to Materials planning. 1.5 Importance of specifications in Materials Management.
Unit – 2 Inventory Management (08 hrs, 10 marks)	
2.a. Describe concept of inventory, ABC analysis 2.b. State advantages of ABC analysis mechanics	2.1 Selective control – ABC Analysis Purpose and objectives Advantages and limitations of ABC Analysis. 2.2 Order point, Lead time, safety stock, Reorder point, Standard order, Economic order. 2.3 Economic Order Quantity Concept, graphical representation, determination of EOQ.
Unit – 3 Buying & Inventory Control (08 hrs, 10 marks)	
3.a. Describe purchase functions & procedures. 3.b. State significance and approaches of price forecast 3.c. Describe coding techniques for inventory. 3.d. State importance of standardization.	3.1 Sourcing, Buy or lease and Purchase systems. 3.2 Value analysis framework, Implementation methodology. 3.3 Ethics in purchasing. 3.4 Price Forecasting- Importance & Approaches. 3.5 Inventory turns ratios. 3.6 Standardization- need & importance. 3.7 Codification- concept, benefits.
Unit - 4 Latest Techniques in Materials Management (08 hrs, 10 marks)	
4.a. Explain Just in Time (JIT) inventory concept. 4.b. State importance and applications of SAP.	4.1 Inventory concept - Just in Time (JIT). 4.2 Introduction to SAP - importance and applications of SAP. 4.3 Introduction to Supply chain management. 4.4 Objectives, Importance Forecasting and Applications of supply chain management.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Importance of Materials Management	8	6	2	2	10
II	Inventory Management	8	2	4	4	10
III	Buying & Inventory control	8	2	2	6	10
IV	Latest Techniques in Materials Management	8	2	4	4	10
Total		32	12	12	16	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Do survey and make a report on actual difficulties faced in materials management in different segments of industries.
- Study and make a presentation on different Inventory management practices followed in industries.
- Collect information and make a report on benefits achieved by maintaining good / optimum levels of inventory on the shop floor.
- Study and make a report on different factors affecting the purchase cost in industrial materials management.
- Do survey and make presentation on different classes of materials observed w.r.t materials management practices.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/subtopics.
- About **15-20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for co-curricular activities.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with concerned equipments / technology.
- Use the proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operations, processes.
- Teacher should ask the students to go through instruction and technical manuals.

11. SUGGESTED MICRO PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title	Author, Publisher, Edition and Year of Publication	ISBN Number
1	Materials Management	Ammer Deans S, R.D. Irwin Hellions Publisher	ISBN10: 0210226765 ISBN13: 9780210226766
2	Materials Management An Integrated Approach	P. Gopalakrishnan and M. Sundaresan Prentice – Hall of India Pvt. Ltd. New Delhi	ISBN978-81-203-0027-9
3	An Integrated Concept of Materials Management	M.M. Shah Tata McGraw Hill Publisher Co. Ltd. New Delhi.	ISBN:007451749X 9780074517499
4	Supply chain management strategy, planning and operation	Sunil Chopra Kellogg School of Management Peter MeindlKepos Capital- Pearson Educa- tion, Inc., publishing as Prentice Hall.	ISBN-13:978-0-13- 274395-2

13. SOFTWARE/LEARNING WEBSITES



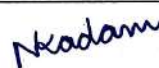
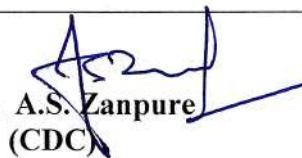
1. <https://youtu.be/raqi4gjMLm8>
2. <https://youtu.be/abBvHqf26H8>
3. <https://nptel.ac.in/courses/110/105/110105095/>
4. <https://www.digimat.in/nptel/courses/video/110105095/L02.html>
5. <https://www.digimat.in/nptel/courses/video/110105095/L06.html>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	1	2	1	2	3	2
CO2	1	2	1	1	3	3	1
CO3	2	1	3	2	2	3	3

	PSO1	PSO2	PSO3	PSO4
CO1	1	-	-	1
CO2	1	-	-	2
CO3	1	-	-	1

*NOTE:-The department who will run this course please do the PSO - competency- CO mapping according to your PSOs as this mapping is done according to Metallurgical Engg. PSOs

Sign:  Name: Mr. R. S. Tuljapurkar (Course Expert) Lecturer in Metallurgical Engg.	Sign:  Name: Mrs. N. S. Kadam (Head of Department) Department of Metallurgical Engg.
Sign:  Name: Mrs. N. S. Kadam (Program Head) Department of Metallurgical Engg.	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/06/07/08/15/16/17/18/19/21/22/23/24/26
Name of Course	Disaster Management
Course Code	MA 4104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme			
					Theory		Practical	
L	T	P	C	#ESE	PA	ESE	PA	50
02	00	00	02	Marks	40	10	--	
				Exam Duration	2Hrs	1/2Hr	--	--

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Sensitization of every citizen of the country regarding disaster management is of utmost importance. A diploma holder in any discipline has a greater role in disaster management owing to the technical skill sets possessed by him/her. The course is an attempt to sensitize the students pursuing diploma programme in Engineering / Technology about various aspects of Disaster management.

3. COMPETENCY

The aim of this course is to address following Society / Industry identified competency through various teaching learning experiences:

- **Exhibit capability to contribute in Disaster management related activities through the technical skill sets possessed.**

4. COURSE OUTCOMES (COs)

On completion of the course through theory and relevant soft skills, the student shall demonstrate the following tangible outcomes

1. Define and emphasize the significance of various terms associated with disaster and disaster management.
2. Classify and distinguish various types of disasters.
3. Interpret and elaborate features of the disaster management setup in India
4. Elaborate on the disaster mitigation, disaster preparedness and relief operations.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Disaster and Disaster Management Concepts (Hrs-6 , Marks- 6)	
1a. Define disaster and disaster management. 1b. Define terms associated with disaster and disaster management. 1c. Correlates the effect of Vulnerability and Coping capacity on disaster management.	1.1 Disaster and Disaster management: Definitions of Disaster and disaster management. 1.2 Definition of terms associated with disaster and disaster management: Definition of terms Vulnerability to disaster, Hazard, Risk, Risk management, Coping capacity 1.3 Correlation of Vulnerability and Coping capacity in Disaster management: Effect of vulnerability to disaster on the effect of disaster and disaster management. Influence of coping capacity on disaster assessment and mitigation.
UNIT 2. Types of disasters (Hrs- 6 ,Marks: 8)	
2a. Classify disasters based on source. 2b. Classify Natural and Manmade disasters in to further categories. 2c. Further classification of disasters based on sequence of occurrence, Pace and scale.	2.1 Classification of disaster based on source as Natural and Manmade. 2.2 Classification of Natural disasters as atmospheric, Terrestrial, Aquatic and Biological. 2.3 Classification of manmade disasters as Industrial, Chemical, Technological, Nuclear, Gas leaks, Oil spills, Dam failures and canal breaches, Wars, Terrorist attacks, Biological, Transportation accidents. 2.4 Primary and secondary, Slow onset and rapid onset, simple and complex disasters.

UNIT 3 Disaster management in India (Hrs- 12, Marks: 16)	
3a. Elaborates the provisions of Disaster management Act 2005. 3b. Signifies the role of National Institute of Disaster Management (NIDM) and elaborates on its activities. 3c. Describes the evolution of disaster management set up at national / state / district levels.	3.1 Disaster scenario in India, its vulnerabilities, review of some of the notable disasters in Indian history. 3.2 National disaster management Act 2005, its provisions, authorities at different levels and their roles/ responsibilities. 3.3. National Institute of Disaster Management (NIDM) – the need for its establishment, activities, contributions to disaster management in India. 3.4. National disaster management policy 2009, National Disaster management plan 2016 and 2019, Maharashtra state disaster management plan 2016. Provisions, features and role in strengthening national disaster management.
UNIT 4. Disaster mitigation and relief (Hrs- 8, Marks: 10)	
4a. Describes various stages involved in disaster mitigation. 4b. Elaborates disaster risk reduction strategies. 4.c. Signifies the need for disaster preparedness in disaster management. 4.d. Elaborates Disaster relief and rehabilitation activities.	4.1 Disaster mitigation strategies as per national disaster management plan provisions. 4.2 Disaster risk reduction strategies and study of factors contributing to disaster vulnerability. 4.3 Study of disaster preparedness strategies and early warning systems to anticipate occurrences of disaster to improve preparedness. 4.4 Disaster relief activities as per the provisions of statutes and the action plans and procedures for disaster relief. Stake holders in disaster relief management. 4.5 Capacity building rehabilitation measures and long term reconstruction.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Disaster and Disaster Management Concepts	06	02	04	00	06
II	Types of disasters	06	04	04	00	08
III	Disaster management in India	12	04	12	00	16
IV	Disaster mitigation and relief	08	04	06	00	10
Total		32	14	26	00	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom, following student-related *co-curricular* activities are suggested which reinforce the cognitive learning and aid in attainment the course outcomes;

- a. Individual student shall prepare a report on one natural and one manmade disaster that has occurred in India (Preferably in Maharashtra) in the last 10 years. The report shall highlight classification of the disaster, magnitude, vulnerability of the disaster

location/ site, mitigation measures, relief activities undertaken and long-term measures and their effect.

- b. Individual student shall prepare a report on a successful disaster preparedness exercise executed in India in the near past. The report shall highlight the risk reduction strategies adopted, early warning systems used and reduction of vulnerability to hazard measures adopted.
- c. Each individual student undergoing this course shall complete “Course 1 – Basics of disaster management under the self-study programme of National Institute of Disaster Management (NIDM) and secure certification for the same.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

- a. All the units of curriculum are supported by selective MOOCS prepared by Educational Multimedia Research Centre (EMRC) Osmania University on Disaster management. The Urls of the earmarked video clips for the course are listed as reference material in the curriculum. The students can access them.
- b. The course teacher shall prepare study material to the students based on the MOOCs, reference materials listed.

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	The Disaster Management Act, 2005	Government of India	N A (pdf of the bare act is enclosed with curriculum)
2	National Disaster Management Plan (NDMP) 2016	Government of India	N A (pdf of the bare act is enclosed with curriculum)
3	Maharashtra State Disaster Management Plan 2016	Government of Maharashtra	N A (pdf of the bare act is enclosed with curriculum)
4	National Disaster Management Plan 2019	Government of India	N A (pdf of the bare act is enclosed with curriculum)
5	Draft National Disaster Management Plan Part II Disaster mitigation and response function plans	Government of India	N A (pdf of the bare act is enclosed with curriculum)

13. SOFTWARES / ONLINE LEARNING RESOURCES

The students and faculty can visit following earmarked urls for MOOCs of EMRC Osmania University without indulging in any acts violating copyright.

1. <https://youtu.be/DExlZTfKZAM?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG>(Disaster and Disaster management concepts)
2. https://youtu.be/7ZhS_HrivqA?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG (Types of Disaster)


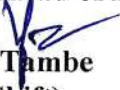




3. <https://youtu.be/BI38KKij9Nc?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Natural Disasters)
4. <https://youtu.be/cijSod44Q2g?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Manmade Disaster)
5. <https://youtu.be/zwIQVKqytD4?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Slow onset and Rapid onset Disasters)
6. <https://youtu.be/zBqvJkzbn-w?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Simple and Complex Disaster)
7. <https://youtu.be/e3MwwrRMfZ8?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Evolution of Disaster in India)
8. <https://youtu.be/iFPMSRCswG0?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Disaster and disaster management in India)
9. <https://youtu.be/u9ch6eqjG-Y?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Disaster management act 2005)
10. <https://youtu.be/e5KV2exJTE?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (National Institute of Disaster Management)
11. <https://youtu.be/6zFOS1VVGLw?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (National Policy on disaster management)
12. <https://youtu.be/PHUf3WFtGfc?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (National disaster management plan 2016)
13. <https://youtu.be/mgb7bs4Yv1g?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Stake holders in disaster management)
14. <https://youtu.be/GtFO-FaUwbM?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Central Government as stake holder in disaster management)
15. <https://youtu.be/J4oMdAOuUFQ?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (State Government as stake holder in disaster management)
16. <https://youtu.be/7TFTXqOtARo?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (District administration as stake holder in disaster management)
17. <https://youtu.be/rUziSTV219o?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Armed forces as stake holder in disaster relief management)
18. <https://youtu.be/lv80bN26KeE?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Paramilitary forces as stake holder in disaster relief management)
19. <https://youtu.be/IDhM8Co1pEs?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Fire services as stake holder in disaster relief management)
20. <https://youtu.be/ueqXIFC5bg0?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Disaster risk reduction strategies)
21. <https://youtu.be/VQ6tMdBZARM?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Disaster preparedness plan)
22. <https://youtu.be/TFLwWMcQll4?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Early warning system in disaster preparedness)
23. <https://youtu.be/972scfiEPtw?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Factors contributing to disaster vulnerability)
24. <https://youtu.be/9e-iiKwQ3I4?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Disaster risk reduction master plan for the future)
25. <https://youtu.be/y0qui7QWTQU?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Components of disaster relief)
26. <https://youtu.be/9EWZvwE2548?list=PLC4PaTsQiLcbejXqJR7S59Ohk2OK1rgEG> (Capacity building rehabilitation measures and long term reconstruction)

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	-	-	-	-	-	1
CO2	-	-	-	-	1	-	1
CO3	-	1	2	1	2	1	2
CO4	1	1	2	1	2	2	2

	PSO1	PSO2	PSO3
CO1	-	-	-
CO2	1	-	-
CO3	1	1	1
CO4	2	2	2

***NOTE:-**The department who will run this course please do the PSO - competency- CO mapping according to your PSOs as this mapping is done according to Civil Engg. PSOs

Sign: Dr. S M S Shashidhara Mr. V B Kondawar  (Course Experts)	Sign: Name: (Dr. S.M.S. Shashidhara) (Former Head of Department) Mr. V G Tambe  (HOD I Shift) Mr. V B Kondawar  (HOD II shift)
Sign: Name: (Dr. S.M.S. Shashidhara) (Former Program Head) Mr. V G Tambe  (Programme Head) Mr. V B Kondawar  (Programme Head) (Civil Engineering Department)	Sign:  Name: Mr. A.S. Zansure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Programme code	01/02/03/04/05/ 06/07 /08/16/17/21/22/23/24/ 26
Name of Course	Introduction to E-Commerce
Course Code	MA4105
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory Marks		Practical Marks		Total Marks
#ESE	PA	ESE	PA						
02	00	00	02	Marks	40	10	--	--	50
				Exam Duration	2Hrs	1/2Hr	--	--	--

(*): *OE/POE (Oral Examination/Practical & Oral Examination NA)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course is aimed at providing the students with modules on the use of the Internet and e-commerce. It also includes all aspects of deploying e-business and e-commerce within an organization. It also provides theories and concepts and questions the validity of these models in the light of the differences between the Internet and other media.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Understand real time problem solving and relevant soft skills.**

4. COURSE OUTCOMES (COs)

The theory, real time problem solving and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

Define E-commerce and various business models.

1. Describe fundamental sales process.
2. Recognise the variants of the process of B2C and B2B.
3. Identify ethical aspects of ICT.

5. SUGGESTED PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit- 1 Introduction to E-Commerce (Weightage-06, Hrs- 04)	
1a. Define E-commerce. 1b. Differentiate between various business models. 1c. Explain technical challenges. 1d. Explain economic challenges.	1.1 Basics and definitions – E-Commerce. 1.2 Business models related to E-Commerce. 1.3 Technical and economic challenges.
Unit-2 Frameworks and Architectures (Weightage-10, Hrs- 08)	
2a. Explain fundamental sales process. 2b. List out Technological elements.	2.1 Actors and Stakeholders. 2.2 Fundamental sales process. 2.3 Technological elements.
Unit-3 B2C Business (Weightage-10, Hrs- 08)	
3a. Explain the variants of the process of B2C. 3b. Differentiate between various challenges. 3c. Understand CRM.	3.1 The process model and its variants. 3.2 The pricing challenges. 3.3 The fulfilment challenges. 3.4 The payment challenges. 3.5 B2C-business and CRM. 3.6 B2C software systems.
Unit-4 B2B Business (Weightage-08, Hrs- 06)	
4a. Explain the variants of the process of B2B. 4b. Identify B2B software systems.	4.1 The process model and its variants. 4.2 B2B software systems.
Unit-5 Impact of E-Commerce (Weightage-06, Hrs- 06)	
5a. Identify ethical aspects of ICT. 5b. List out different impacts of E-Commerce.	5.1 Ethics, morale and technology. 5.2 Ethical aspects of ICT. 5.3 Overall impacts of E-Commerce. 5.4 Specific impacts of E-Commerce.

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction To E-Commerce	04	02	02	02	06
II	Frameworks and Architectures	08	02	04	04	10
III	B2C Business	08	02	04	04	10
IV	B2B Business	06	02	04	02	08
V	Impact of E-Commerce	06	02	02	02	06
Total		32	10	16	14	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews: -Student can study and prepare report on any application in which e-commerce they used.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are strategies, which can be used to accelerate the attainment of the various outcomes in this course:

Sr. No.	Topic	Instructional Strategy
1	Introduction To E-Commerce	Class room teaching
2	Frameworks and Architectures	Class room teaching
3	B2C Business	Class room teaching
4	B2B Business	Class room teaching
5	Impact of E-Commerce	Class room teaching

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author Publisher, Edition and Year of publication	ISBN Number
1	Introduction to E-Commerce: Combining Business and Information Technology	Prof. Dr. Martin Kutz 1 st Edition Jan 2020	ISBN 9788740315202

13. SOFTWARE/LEARNING WEBSITES





- <https://blog.ipleaders.in/introduction-to-e-commerce-an-ultimate-guide/>
- <https://noteslearning.com/what-is-e-commerce-introduction-types-and-importance/>
- <https://www.techtarget.com/searchcio/definition/e-commerce>
- <https://www.investopedia.com/terms/e/ecommerce.asp>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	-	-	-	1	3	2
CO2	1	1	-	1	1	3	2
CO3	1	-	-	1	1	3	3
CO4	1	1	-	1	1	3	3

	PSO1	PSO2
CO1	-	2
CO2	-	2
CO3	-	2
CO4	-	2

***NOTE:-**The department who will run this course please do the PSO - competency- CO mapping according to your PSOs as this mapping is done according to Computer Engg. PSOs

Sign: Name: 1. Mrs. H. S. Pawar 2. Mrs. N. R. Wagh 3. Mrs. P. N. Yewale 4. Mrs. S. S. Ingavale 5. Mrs. S. J. Siraskar 6. Mrs. S. R. Hande  (Course Experts)	Sign: Name: Mr. U.V. Kokate Dr. S. B. Nikam.  (Head of Department) (Department of Computer Engineering)
Sign: Name: Mr. U.V. Kokate Dr. S. B. Nikam  (Programme Head) (Computer Engineering)	Sign: Name:  Mr. A.S. Zanpure (CDC In-charge)

Government Polytechnic, Pune

'180OB' – Scheme

Program Name	Diploma in CE/EE/ ET/ME/MT/CM/IT/DDGM
Program Code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Course Title	Information Management
Course Code	MA4106
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory Marks		Practical Marks		Total Marks
L	T	P	C		#ESE	PA	ESE	PA	
				Marks	40	10	--	--	50
02	00	00	02	Exam Duration	2Hrs	1/2Hr	--	--	--

(*): OE/POE (Oral Examination/Practical & Oral Examination NA)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Organizations of all sizes generate and work on information .Collection and management of Information becomes an important aspect in each and every field. This course is aimed at providing the students with the basics of Information Management.

3. COMPETENCY

The aim of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- Use information management system in industries.

4. COURSE OUTCOMES (COs)

The theory, real time problem solving and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

1. Recognize information system in any organization.
2. Enlist types of Information Systems.
3. Identify the competitive environment of business.
4. Identifying challenges in Information management.
5. State Social and Ethical issues with Information Management.

5. PRACTICALS/ EXERCISES

NA

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED
NA

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit-1 Organizations and Information Systems (Weightage-08, Hrs-06)	
1a. List different types of modern organizations. 1b. Explain IT interaction model. 1c. Identify challenges for the manager.	1.1 Modern Organization- IT enabled, Net-worked, Dispersed, Knowledge Information Systems in Organizations. 1.2 Managing Information Systems in Organization. 1.3 Challenges for the manager. 1.4 The Role of Internet 1.5 Managing the Internet era
Unit-2 Concepts of Management Information Systems (08 marks, 06 hrs)	
2a. Enlist types of Information Technology. 2b. Enlist types of Information Systems. 2c. Differentiate between various decisions. 2d. Explain communication in organizations.	2.1 Data and Information, Information as a re-source. 2.2 Information in organizational functions. 2.3 Types of Information Technology, Types of Information Systems. 2.4 Decision making with MIS. 2.5 Communication in organization.
Unit-3 Information Systems and Management Strategy (10, marks 08 hrs)	
3a. Identify the competitive environment of business. 3b. Find out the properties of Information Goods. 3c. Explain value chain.	3.1 The competitive environment of business. 3.2 Using IT for competing. 3.3 Information Goods. 3.4 Information Systems and Competitive strategy.
Unit-4 Managing Information Systems (08,marks 06 hrs)	
4a. Understand the challenges of managing the IT function. 4b. Identify vendor. 4c. Explain the role of CIO.	4.1 Challenges of managing the IT function. 4.2 Vendor Management. 4.3 The Role of CIO.
Unit-5 Ethical and Social Issues (06 marks 06 hrs)	
5a. Explain Ethical issues. 5b. Explain Social issues.	5.1 Ethical issues- Privacy, Workplace Monitoring, Power over Users. 5.2 Social issues- Workplace behaviour and Health, De-skilling and Alienation, Tele-commuting, E-Waste.

8. SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Organizations and Information Systems	6	4	2	2	08
II	Concepts of Management Information Systems	6	4	2	2	08
III	Information Systems and Management Strategy	8	4	4	2	10
IV	Managing Information Systems	6	2	4	2	08
V	Ethical and Social Issues	6	2	2	2	06
Total		32	16	14	10	40

9. STUDENT ACTIVITIES

Other than the classroom learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for the activity mentioned, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews :-

Student can study and prepare report on information management as done in any small setup like cyber café, canteen, medical or grocery shops etc.

10. SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are strategies, which can be used to accelerate the attainment of the various outcomes in this course:

Sr. No.	Topic	Instructional Strategy
1	Organizations and Information Systems	Class room teaching
2	Concepts of Management Information Systems	Class room teaching
3	Information Systems and Management Strategy	Class room teaching
4	Managing Information Systems	Class room teaching
5	Ethical and Social Issues	Class room teaching
6	Organizations and Information Systems	Class room teaching

**11. SUGGESTED LIST OF MICROPROJECTS:-
NA**

12. LEARNING RESOURCES

Sr.No.	Title of Book	Author, Publisher, Edition and Year of publication
1	Indian Economy	Rahul Rai

13. SOFTWARE/LEARNING WEBSITES

1. https://en.wikipedia.org/wiki/Information_system

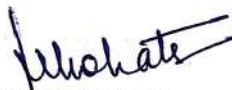


14. PO/PSO - COMPETENCY- CO MAPPING

CO/PO	Basic and Discipline Specific Problem Analysis	Design/Development of Solutions	Engineering Tools, Experiments and Practices for Society, Sustainability and Environment	Project Management	Life Long Learning
Recognize information system in any organization.	-	-	2	2	3
Enlist types of Information Systems	-	-	1	2	3
Identify the competitive environment of business.	-	-	2	2	3
Identifying challenges in Information management	-	-	1	3	3
State Social and Ethical issues with Information Management.	-	-	3	2	3
Summary	-	-	2	3	3

PSO - COMPETENCY- CO MAPPING

	Hardware and Networking	Database Technologies	Software Development
CO1	1	1	1
CO2	-	2	2
CO3	-	1	2
CO4	-	1	1
CO5	1	1	2
Summary	1	1	2

***NOTE:-**The department who will run this course please do the PSO - competency- CO mapping according to your PSOs as this mapping is done according to IT dept. PSOs

<p>Sign :</p> <ol style="list-style-type: none"> 1. Mrs. P. N. Yewale 2. Mrs. G.B. Garud 3. Mrs. A.S. Paikar 4. Mrs. P.K. Zade 5. Mrs. S.R. Hande <p>(Course Experts)</p>	<p>Sign :</p>  <p>Mrs. M. U. Kokate (Head of the Department) (Department of Information Technology)</p>
<p>Sign :</p>  <p>(Mr. U.V. Kokate) (S B Nikam) (Program Head) (Department of Computer Engineering)</p>	<p>Sign:</p>  <p>Mr. A.S. Zanpure (CDC In-charge)</p>

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/21/22/23/24/26/15/16/17/18/19/
Name of Course	INDUSTRY INPLANT TRAINING
Course Code	DD4101
Prerequisite course code and name	Concerned Level 1 & Level 2 courses Term grant

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C		ESE	PA	\$ESE	PA	
00	00	06	06	Marks	--	--	50	50	100
				Internship Duration	6 weeks duration				

(\$): OE (Oral Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

Note: Both ESE and PA part of assessment will be carried out by institute faculty and industry training mentor as explained in Table 1 and Table 2, Table 3.

2. RATIONALE :

Employability competencies can be enhanced by exposing students to the actual real time working environment in industry . The industrial skills like, soft skills, life skills and hands-on will be inculcated among the students. Inplant training is the only way students learn application of acquired knowledge to fulfill market demand and develop skills and competencies required to become employable.

3. COMPETENCY:

Following competencies are expected to be developed through INDUSTRY INPLANT TRAINING :

- Soft Skills : Communication, Presentation, Technical Report Writing.
- Life Skills : Time management, Safety, Innovation, Entrepreneurship, Team building etc..
- Hands-on Practices: Implementation of production process and development of software and Quality Assurance aspects.

4. COURSE OUTCOMES:

Industry Inplant training is intended to acquire the competencies as mentioned above to supplement those attained through several courses up to fourth semester of the program:

1. Communicate effectively (verbal as well as written) to execute the work.
2. Prepare the report of the executed work at the industry.
3. Exercise time management and safety in the work environment.
4. Work in teams for successful completion of projects assuring quality.

5. GENERAL GUIDELINES FOR INDUSTRIAL TRAINING

- a) **Period of Industrial Training:** Between 4th and 5th semester (Summer Vacation).
 - b) **Duration of the training:** Six weeks
 - c) The Industries/Organizations can be Government/Public limited/or Private family enterprises.
- **Training Area:** Students should be placed in large and medium scale Industry / Organization. However, despite the best efforts by the institute, if large and medium scale Industry / Organization are not available to all students then, students can also be placed in small scale Industry / Organization.

For **Civil engineering** it can be public works department, irrigation department, public health engineering, municipal corporations, town and country planning, highway and roads authorities, railways, large and medium scale civil contractors, rural engineering departments, environment corporations, large and medium scale private construction companies, mining companies etc.

For **Mechanical Engineering** it can be manufacturing, fabrication, foundry or processing industry which may include compressors, boilers, engines, heat exchangers, air conditioning and refrigeration plants, conveyors ,automation etc are either manufactured or used. Power plants, Railways, process plants, ordinance factories, textile factories, automobile manufacturers or major automobile workshops

For **Electrical Engineering** it can be electricity transmission and distribution companies, power generating stations, sub stations, railways, industries manufacturing electrical products which may include industry where large motors/transformers etc. are used, process plants, electrical contractors.

For **Electronic Engineering** it can be telecommunication companies, post and telegraph department, manufacturer of telecommunication product, manufacturers of control equipments, manufacturer of CNC machines, any manufacturing industry where electronic controls are used either in production process or in its products, computer hardware manufacturers, signal divisions of railways, etc.

For **Computer and IT Engineering** it can be any software developers, cyber security companies, web page developers, networking companies, data base management companies, telecommunication companies or IT division of any other industries/finance/retail companies or organizations where software are used and maintained for various applications.

For **Metallurgical Engineering** it can be manufacturing industry such as fabrication , foundry , processing industry, forging, galvanizing, Iron making and steel making industries.

For **Dress Designing and Garment Manufacturing** it can be Textile industries, Weaving and Knitting industries, Garments industries, Design and Styling fashion garments , Retail malls.

6. ROLE OF PARENT DEPARTMENT & THE INSTITUTE:

A. Formation of Placement cell for IIP at institute level: (one time activity)

It will be consisting of Training & Placement Officer (TPO), CDC Incharge , and one Faculty from each program .

Activities to be carried by Institute IIP Cell:

A.1 Collecting information about Industry / Organisation available for training along With the capacity.

A.2 Communication with Industry / Organisation available for training along with Capacity and its confirmation.

A.3 Issue letter to the Industry / Organisation for the training along with details of Students and mentors.

B. Formation of IIP Cell At program level: (one time activity)

It will be consisting of A faculty from Institute IIP cell , One faculty per division.

for examiners coordination ,orientation +mentors ,letters initialization,
Activities to be carried by Program level IIP Cell:

B.1 Student and mentor allocation as per the slots available for in-plant Training.

B.2 Obtaining consent letter from parents / guardian.(Undertaking on Rs100 stamp, Insurance)

B.3 Orientation and selection of Students in before start of Industry inplant training through counseling.

B.4 Mentors to carry out progressive assessment of the students during the in-plant training.

B.5 End of training assessment by mentor along with Industry / Organization expert as external

● Scheduling for Inplant Training placements –

Sr. No	activity	Period	Responsibility
1	Industries to be identified	6 th -8 th week of 4 th Semester.	Departmental inplant training coordinator
2	Communication and coordination with industry	8 th -10 th week of 4 th Semester	Departmental inplant training coordinator
3	Allocation of faculty / Mentor	8 th -10 th week of 4 th Semester	Departmental inplant training coordinator
4	Acquire undertaking from students and parents .	10 th – 12 th week of 4 th Semester	Allocated faculty / Mentor

5	Finalise and prepare letter of placements	12 th – 16 th week of 4 th Semester	Allocated faculty / Mentor
6	Organise orientation and guidance and counseling Session for respective students	12 th – 16 th week of 4 th Semester	Allocated faculty / Mentor
7	Progressive assessment of the students during the in-plant training	Each week of training	Allocated faculty / Mentor
8	End of training assessment by mentor along with Industry / Organization expert	Before 5 th semester ESE	Allocated faculty / Mentor

- Faculty will be visiting the industry **at least once** during training phase after third week for assessment in coordination with industry personnel and for taking feedback. Weekly assessment can be done through online mode .

7. FORMAT FOR TRAINING REPORT

Following is the suggestive format for the training report, actual format may differ slightly depending upon the nature of Industry / Organisation. The training report may contain the following

- Title page
- Certificate
- Abstract
- Acknowledgement
- Content Page

Chapter 1. Organizational structure of Industry / Organisation and General Lay Out

Chapter 2. Introduction of Industry / Organisation (Type of products and services, history, turn over and number of employees etc.)

Chapter 3. Types of major equipment/instruments/machines/hardware and software used in industry with their specification, approximate cost and specific use and their routine maintenance.

Chapter 4. Manufacturing Processes/Models along with planning , handling and control methods.

Chapter 5. Testing of Hardware/Software/raw materials, components and finished products along with quality assurance procedures.

Chapter 6. Safety procedures followed and safety gear used (includes Preventive maintenance schedule and breakdown maintenance procedures).

Chapter 7. Particulars of Practical Experiences in Industry / Organisation if any in Production/ Assembly/ Testing/Maintenance.

Chapter 8. Detailed report of the Task . (if any done during the training)

Chapter 9. Special/challenging experiences encountered during training if any (may include students liking & disliking of work places)

Chapter 10. Conclusion

Chapter 11. References /Bibliography

8. SUGGESTED LEARNING & EVALUATION STRATEGIES/GUIDELINES

- Students should visit the website of the industry where they are undergoing training to collect information about products, processes, capacity, number of employees, turnover etc.
- They should also refer the handbooks of the major machinery, softwares and operation, testing, quality control and testing manuals used in the industry.
- Students may also visit websites related to other industries wherein similar products are being manufactured as their learning resource.
- Both the industry supervisor and the faculty supervisor are responsible to assess the students' performance and soft-skills.
- To assess the students, the scoring rubric, scoring schemes and rating scales are developed. The components to be assessed are :
 - Industrial training Report,
 - Logbook(Diary),
 - Industrial training Oral Presentation,
 - Student Performance Evaluation by Organization Supervisor, and
 - Student Performance Evaluation by Faculty Supervisor
 - Industrial Training report writing require students to produce a substantial report to explain about the organization's background, the overall training that have been performed and the specific projects that they have conducted along with specific conclusions /solutions.
 - The students must apply the skills of communicating using written language, outlining, organizing, and planning a report, as well as using reference materials and sources and follow the above format.
 - The student plays important role in deciding what should be included in the log book and learn to understand and evaluate her own progress.
 - In exceptional case, on line training can also be considered as an option, provided, the contents and the assessment schemes are approved from the concerned authorities.
 - Student performance evaluation focuses on a student's work performance and the personality. The scoring rubric forms are used that relates assessment item to the learning outcome. The work performance is the ability to complete the given tasks within the specified time frame independently using their knowledge and skills with good quality of work. The soft skills include the socialization, communication, initiative and motivation, discipline, cooperation and teamwork

9. TENTATIVE WEEK-WISE SCHEDULE OF INDUSTRIAL TRAINING

Industrial training is a common course to all programs; therefore the industry / Organisation selection will depend upon the nature of programme and its related industry. The training activity may vary according to nature and size of Industry / Organisation. The following table details suggestive schedule for industrial training for all programs.

Table 1: Guidelines for generalized week schedule and PA Marks distribution

Sr. No.	Week No.	Details of activities to be completed during Industrial training	Marks distribution/ week for PA
1	Week No. 1	Induction to industry and its departments or study of assigned job.	04
2	Week No. 2	Study of layout and specifications of major machines, equipment and raw materials / components / software and models used.	04
3	Week No. 3	Execute/study Task. (Execution may start from first week as per job assigned and nature of industry)	04
4	Week No. 4	Study of QA/QC/Testing procedures.	04
5	Week No. 5	safety and maintenance procedure in an industry/organization .	04
		Total	20
6b	Week No. 6	Report Writing (PA marks to be given by faculty based on report writing)	10
PA marks to be given by industry supervisor based on student involvement and quality of job performed or job assigned.			20
Total PA marks for training			50

Table 2: Suggested Rubric for PA Assessment of Internships/Implant Training**Note: Allot the marks in the appropriate cell given based on Presentations Done**

Week No	Task to be assessed	Outcome Achievement – Poor	Outcome Achievement – Moderate	Outcome Achievement – High		Total week wise Marks
		Poor (Marks 1)	Average (Marks 2)	Good (Marks 3)	Excellent (Marks 4)	
Week 1 : Industry Induction	Induction to industry and its departments or study of assigned job.	Minimal knowledge of departments, processes, products & work culture of the company	Moderate knowledge of departments, processes, products & work culture of the company	Good knowledge of all departments, processes, products & work culture of the company	Extensive knowledge of all departments, processes, products & work culture of the company	
					1	
Week 2 : Study of Existing Systems	Study of layout and specifications of major machines, equipment and raw materials / components / software and models used.	Minimal Explanation of existing systems & Objectives of the proposed work are not identified	Moderate Explanation of existing systems & Objectives of the proposed work are not well defined	Good Explanation of existing systems & Some objectives of the proposed work are well defined	Detailed Explanation of existing systems & All objectives of the proposed work are well defined	

Week No. 3: Execution of task	Execute/study Task. (Execution may start from first week as per job assigned and nature of industry)	Minimal efforts and participation and poor understanding	Moderate efforts and participation and preliminary understanding	Good efforts and participation and fair understanding	Extensive efforts and participation and well understanding	
Week 4 : Testing Procedures	Study of QA/QC/Testing procedures.	Applications are not appropriate	Applications are appropriate but not well delivered	Applications are appropriate and well delivered Student cannot apply his/her knowledge on top of assessing what he/she knows	Applications are appropriate and well delivered Student can apply his/her knowledge on top of assessing what he/she knows.	
Week 5 : Study Safety & Maintenance Procedure	Study safety and maintenance procedure in an industry/organization .	Not very appropriate	Appropriate but not well delivered	Appropriate and well delivered Student cannot apply his/her knowledge on top of assessing what he/she knows	Appropriate and well delivered Student can apply his/her knowledge on top of assessing what he/she knows.	
				Total Marks out of 20		

Week No	Task to be assessed	Outcome Achievement – Poor	Outcome Achievement – Moderate	Outcome Achievement – High	Week No	Task to be assessed
		Poor (Marks 5)	Average (Marks 6)	Good (Marks 8)	Excellent (Marks 10)	
Week 6 : Report Writing	Description of concepts and technical details Conclusions and Discussion	Results are not presented properly Project work is not summarized and concluded Future extensions in the project are not specified	Results are presented in good manner Project work is not well summarized and concluded Future extensions in the project are not properly specified	Results are presented in good manner Project work is well summarized and concluded Future extensions in the project are not properly specified	Results are presented in very appropriate manner Project work is well summarized and concluded Future extensions in the project are well specified.	
				Total Marks out of 10		
PA marks to be given by industry supervisor based on student involvement and quality of job performed or job assigned.				Total Marks Out of 20		
				Grand Total Marks out of 50		

Table 2.1 -PA of Industrial training

Academic year : 20 -20

Name of the industry:

Sr. No.	Enrolment Number	Name of student	Marks from above Rubrics(Mapped to 4 marks for each week)						PA Marks by Industry Supervisor	PA based on Report by mentor faculty (Week 6)	Total
			Week 1	Week 2	Week 3	Week 4	Week 5	Total out of 20 (A)	Out of 20 (B)	Out of 10 (C)	Out of 50 (A)+(B)+(C)

Marks for PA are to be awarded out of 4 for each week considering the level of completeness of activity observed, from the daily diary maintained and feedback from industry supervisor.

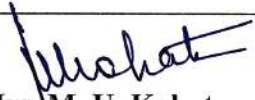
Signature of mentor

Name of mentor:

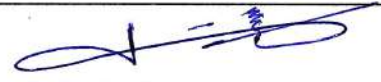
Table 3 Assessment Scheme ESE

Enroll ment No.	Contents(30 marks)					Presentation(20 marks)					Total Out of (50)
	Title of Industrial project	Topic Selection (5)	Presen tation skill (10)	Overall understan ding capability (5)	Knowle dge (Q & A) (10)	Speech Clarity (5)	Body Langua ge (3)	Neat Dressi ng (2)	Slides (05)	Report Writin g(5)	Total Out of (50)

Suggested structure for industry Inplant training


Mrs. M. U. Kokate,
Head of Department of Information Technology,
G.P.Pune


Mr. A.S. Zanpure
CDC Incharge


Dr. V.K. Jadhav,
Lecturer,Electrical Engineering.,GPP.


Mrs. P.M. Zilpe
Lecturer,E&TC Engineering.,G. P. Pune

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme Code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of the Course	Project
Course Code	DD 4102
Prerequisite Course Code and Name	90 credits & L1 passed
Class Declaration	YES

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		ESE	PA	\$ESE	PA	
00	04	00	04	Marks	--	--	50	50	100

(\$): *OE (Oral Examination -External)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course tends to mould students towards integrating the knowledge acquired throughout and applying it to the real life projects, in order to gain the confidence of acquiring Engineering skills and thus fulfil the objective of Diploma Programme. Projects mainly serve the purpose of developing learning-to-learn skills.

3. COMPETENCY

The course should be taught and implemented with the aim to develop the required course outcomes (COs) so that students will acquire following competency needed by the industry:

- **The discipline of planning, organizing, and managing resources to bring about the successful completion of a specific project.**

4. COURSE OUTCOMES (COs)

After undergoing this course, the student will demonstrate the following Course Outcomes :

1. Analyze and define the real life problem from Project development point of view.
2. Apply appropriate design methodology to the Projects.
3. Make use of designing tools.
4. Conduct feasibility study and cost estimation
5. Create test and debug working model.
6. Compile and Write a Project Report
7. Communicate effectively and confidently as a member /and leader of team.

5. GUIDELINES FOR UNDERTAKING A PROJECT :

- I. During the guidance and supervision of the project work, faculty should ensure that students acquire following *learning outcomes*(depending upon the nature of the project work some of these learning outcomes may not be applicable):
- Identify the problems in the area related to their programme based on the competencies acquired since inception into the programme.
 - Identify the information suggesting the cause of the problem and possible solutions.
 - Assess the feasibility of different solutions and the financial implications:
 - Collect relevant data from different sources
(books/internet/market/suppliers/experts etc. through surveys/interviews).
 - Prepare required drawings and detailed plan for execution of the work.
 - Prepare seminar presentations to present findings/features of the project.
- II. In case of Industry sponsored/guided project , implementation stages may vary as per industry requirements but same format of project report, diary, demonstration and RUBRICs will be required to be fulfilled.

Sr. No.	General Guidelines
1.	Project can be Hardware or Software or Combination of Both. It must involve logic building and application of various technologies learnt during Diploma Completion
2.	Project has to be done in a group of 3-4 students under the guidance of allotted faculty
3.	Faculty may Form a team of students as per industry roles- Requirement Gathering, Developers, testers, Business Analysts, Project managers. Assign this team a project. Each group is to be assigned a guide faculty. Project titles are to be decided in co-ordination with Faculty.
4.	Students are required to prepare working model of the Project and simultaneously prepare a report. In general project can be - i. Prototype (design, make, test and evaluate). ii. Application development using hardware/software.
5.	Students Must Submit One Hard copy and one Soft copy each of Project Report and soft-copy of the project code or the working model.
6.	Generically these titles are to be covered in Project Report: a. Problem Definition b. Platform and/Hardware Specifications c. Feasibility Study: Cost Estimation, Time Estimation d. Various Design UML charts/diagrams as applicable like Use Case Diagram, Activity Charts, Class Hierarchy, DFD, CFD, ER-Diagrams, Dependency charts or any other e. Important project Code f. Testing details g. Limitations h. Future Scope/Extendibility i. Books/References/Websites (Other titles may be added and used as applicable, based on the nature of project)

7.	Student should maintain a project diary and note down all the progress steps and details in the diary. Faculty should check the diary each week and accordingly interact with students based on the progress shown and keep proper notings. Impart proper guidance. This will assist in proper evaluation of students. Format of cover page of diary is as Annexure IV. Project diary may contain not more than 5-10 pages.
----	---

Course Implementation Stages:

1. **Orientation Session:** Portfolio Incharge faculty has to coordinate conduction of Project orientation session during last week of fifth semester.
2. **Problem Search and problem statement finalization:** Students have to undergo survey activity under the guidance of faculty . This activity maybe started during earlier semester in parallel with Seminar activity and **completed during first week of semester start.**
3. **Requirement Gathering :** One week to be utilized for gathering detailed project requirements including human resource, technical requirements/resources (software and hardware platforms), feasibility study and cost requirements. Presented to the faculty.
4. **Planning:** Next week must be utilized towards prepare a detailed project proposal and plan which must be executed or implemented within the time allocated. **Planning includes resources required, work allocation, time estimations and cost estimations.** Decide the development model to be implemented.
5. Outcome to be published under **project proposal** . May only be submitted in softcopy.
6. **Project Development, Testing& Report preparations:** Project development to proceed under faculty guidance as per planned.
7. **Project Demonstration:** Phase wise demonstration to faculty is done. The project would have to go through minimum two demonstrations :
 - a. Preliminary demonstration (Given to faculty guide)
 - b. Final Demonstration: During ESE final demonstration of working model is to be presented.

Note:

- i. Student must be maintaining a project diary simultaneously as well as preparing a project report, periodically monitored and assessed by the teacher as per provided RUBRICS.
- ii. Some stages maybe done recursively.

6. ASSESSMENT OF PROJECT WORK

A. Progressive Assessment (PA) Guidelines and criteria

The assessment of the students in the fifth semester Progressive Assessment (PA) for 50 marks is to be done based on following criteria.

Sr. No.	Criteria	Marks
1	Topic Selection & Problem definition	10
2	Requirement Gathering	10
3	Stage wise progress as per discussion	10
4	Involvement in project development	10
5	Report Writing	10

B. End Semester Exam Assessment (ESE) criteria/Term Work assessment criteria

The assessment of the students in the fifth semester End-Semester-Examination (ESE) for 50 marks is to be done based on following criteria. This assessment shall be done by the Faculty.

Sr. No.	Criteria	Marks
1	Knowledge	20
2	Development	20
3	Innovation	5
4	Presentation	5

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

NA

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

As per the guidelines mentioned in Annexure-I or any other guidelines given by faculty.

11. SUGGESTED MICRO-PROJECTS

NA

12. SUGGESTED LEARNING RESOURCES

As per the guidelines mentioned in Annexure-I or any other guidelines given by faculty.

13. SOFTWARE/LEARNING WEBSITES

NA

14. PO/PSO - COMPETENCY- CO MAPPING

- **Mapping Course Outcomes With Program Outcomes:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
	Basic and Discipline Specific knowledge	Problem Analysis	Design/Development of Solutions	Engineering Tools, Experimentations and Testing	Engineering Practices for Society ,Sustainability and Environment	Project Management	Life Long Learning
Analyze and define the real life problem from Project development point of view.	3	3	3	-	2	3	3
Apply appropriate design methodology to the Projects.	3	3	3	3	2	3	3
Make use of designing tools.	3	3	3	3	2	3	3
Conduct feasibility study and cost estimation.	3	3	3	2	2	3	3
Compile and Write a Software Project Report.	2	-	3	1	2	3	3
Communicate effectively and confidently as a member and leader of team.	-	-	-	-	-	3	3
Summary	3	2	3	2	2	3	3

- **Mapping Course Outcomes with Program Specific Outcomes:**

CO /PSO	PSO 1	PSO 2
Analyze and define the real life problem from Project development point of view.	3	3
Apply appropriate design methodology to the Projects.	3	3
Make use of designing tools.	3	3
Conduct feasibility study and cost estimation.	3	3
Compile and Write a Software Project Report.	3	3
Communicate effectively and confidently as a member and leader of team.	3	3
Summary	3	3

Annexure-II Major Project Report

After completion of the project work, every student will submit a project report which should contain the following:

1. Cover Page (as per annexure 1)
2. Title page (as per annexure 2)
3. Certificate by the Guide (as per annexure3)
4. Acknowledgment (The candidate may thank all those who helped in the execution of the project.)
5. Abstract (It should be in one page and include the purpose of the study; the methodology used.)
6. Table of Contents(as per general guidelines):Detailed description of the project (This should be split in various chapters/sections with each chapter/section describing a project activity in totality). This portion of report should contain all relevant diagrams, tables, flow charts, which are properly labelled.
7. Conclusion
8. References (The listing of references should be typed 2 spaces below the heading "REFERENCES" in alphabetical order in single spacing left – justified. It should be numbered consecutively (in square [] brackets, throughout the text and should be collected together in the reference list at the end of the report. The references should be numbered in the order they are used in the text. The name of the author/authors should be immediately followed by the year and other details). Typical examples of the references are given below:

Report Specifications:

1. Project Report's Cover Type: Hard-bound
2. Color of Project Report Cover: Black only with golden alphabets (as per annexure 1)
3. Number of Copies: 5 (Individual copies(each per student) + Departmental Copy(one))
4. Paper Size (orientation): A4 (portrait)
5. Margins: 1" top / bottom / right and 1.5" left
6. Font Type: Times New Roman
7. Font Size: 16 bold for chapter names, 14 bold for headings and 12 for normal text
8. Line Spacing: 1.5 throughout
9. Page Numbering: Bottom center of page in the format – Page 1 of N

NOTE: Project report must contain only a relevant and short mention – technology or platform or OS or tools used . It must be more focussed on project work carried out and its implementation details without including any source code.

Details of Softcopy to be submitted:

CD of the project work is required to be pasted on the back cover of the project report in clear packet, which should include the following folders and contents:

1. **Presentation** (should include a PPT about project in not more than 15 slides)
2. **Documentation** (should include a word file of the project report)
3. **SourceCode** (full source code of the project with libraries used)
4. **Program** (final copy of the project executable)
5. **Support** (any third party tools used or runtime environment setups that are required to run the project)
6. **Help** (user manual on how to run the project)

NOTE: CD must be checked for any harmful viruses before submission. Source Code and Program folders can be combined into single folder **Project** if it's a web project etc.

Annexure-III

Government Polytechnic,Pune

(An Autonomous Institute of Government of Maharashtra)



CERTIFICATE

This is to certify that

- | | |
|-------------------|-------------------|
| 1)Name Of Student | Enrollment Number |
| 2)Name Of Student | Enrollment Number |
| 3)Name Of Student | Enrollment Number |
| 4)Name Of Student | Enrollment Number |

Has completed the necessary project work and prepared the bonafide on

“Project Title”

In a satisfactory manner as a partial fulfillment of requirement of the

THIRD YEAR DIPLOMA IN

DRESS DESIGNING AND GARMENT MANUFACTURING

FOR THE ACADEMIC YEAR

2017-2018

(H.O.D)

(Principal)

(Internal Guide)

(External Examiner)

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INDEX		
Sr.No.	Chapter	Page No.
1.	INTRODUCTION*	1
2.	PROBLEM DEFINATION	5
3.	REQUIREMENT SPECIFICATION	
4	FEASIBILITY STUDY	
5	FLOWCHARTS / DFDS / ERDS/UML DIAGRAMS	
6.	SCREENSHOTS	
7.	ADVANTAGES & DISADVANTAGES	
8.	CONCLUSIONS	
9.	REFERENCES	

***Students can add/remove/edit chapter names as per the discussion with their guide**

Annexure-IV

PROJECT DIARY

Name of the Student: _____ **Name of Guide (Faculty) :** _____

Enrollment Number: _____ **Semester:** _____ **Project batch Number:** _____


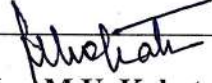

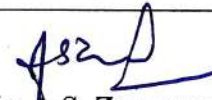
Date	Discussion Topics/Activity Details	Work Allotted Till Next Session/Corrections Suggested/Faculty Remarks	Dated Signature of Faculty

Dated Signature of Faculty

Dated Signature of HOD

Annexure-V**Rubrics**

Progressive Assessment					Project Presentation			
Topic Selection & Problem definition (10)	Requirement Gathering (10)	Stage wise progress as per discussion (10)	Involvement in project development (10)	Report Writing (10)	Knowledge (20)	Development (20)	Innovation (5)	Presentation (5)

Sign:  Name: Mrs. A.B. Bhusagare (Course Expert)	Sign:  Name: Mrs. M.U. Kokate (Program Head and Course Expert) (Information Technology)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC In-charge)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme Code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of the Course	Seminar
Course Code	DD4103
Prerequisite course code and name	90 Credits & L1 passed
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				Total Marks
					Theory		Practical		
L	T	P	C		ESE	PA	\$ESE	PA	
00	04	00	04	Marks	--	--	25	25	50

(\$): *OE (Oral Examination- Internal)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course tends to mould students towards integrating the knowledge acquired throughout and applying it to understand and interpret evolving technologies in order to strengthen the confidence over acquired Engineering skills and thus fulfill the objective of Diploma Programme. Seminar mainly serves the purpose of developing learning-to-learn skills with an aim to develop the following attributes in the students:

3. COMPETENCY

The course should be taught and implemented with the aim to develop the required course outcomes (COs) so that students will acquire following competency needed by the industry:

- **Interpret innovative/new technologies independently.**

4. COURSE OUTCOMES (COs)

After undergoing this course, the student will demonstrate the following Course Outcomes

1. Analyze and study new technologies/tools.
2. Apply technical knowledge.
3. Compile and Write a Seminar Report
4. Work independently, prepare and deliver presentations.

5. GUIDELINES FOR UNDERTAKING A SEMINAR :

1. Department must organize a Seminar Orientation session for all the registered students.
2. The process of conducting a Seminar includes allocating a topic to individual student who should perform the required search, decide on the topic objectives, design and prepare an appropriate method of presentation, and present the topic to their fellow students and teachers with all of the necessary explanation and discussion. Faculty assigned to student should be providing necessary guidance.
3. Students would individually prepare the Seminar report with the following sub-titles:
 - a. Acknowledgement
 - b. Abstract
 - c. Index
 - d. List of Figures
 - e. Introduction
 - f. Information/Chapters related to Seminar topic
 - g. Advantages and Disadvantages
 - h. Conclusion
 - i. References
4. Seminar topic shall be approved by the respective guide.
5. The student will begin to maintain a dated Seminar Diary for the whole semester. This diary should be assessed by respective guide timely. Format of diary is as given in **table I**

Suggested Seminar Activities to be performed:-

- Collection of **at least three Seminar topics** on recent technologies and presentation of their abstract to faculty guide.
- Finalization of Seminar topic.
- Submission of final abstract on selected topic.
- Weekly interaction of students in group with seminar guide.
- Weekly assessment of seminar and work is labeled as Progressive Assessment.
- Group of Students should prepare and submit Report writing and presentation slides of Seminar in consultation with Seminar guide.
- Presentation of Seminar in well defined manner within specified time.
- Submission of Seminar report with the permission of faculty and Head of the Department..

6. ASSESSMENT OF SEMINAR WORK

- Like other courses, assessment of Seminar work also has two components, first is progressive assessment, while another is end of the term assessment that is Term Work.
- The faculty will undertake the progressive assessment to develop the COs in the students. They can give oral informal feedback about their performance and

their interpersonal behavior while guiding them on their seminar work every week.

- There will also be regular progressive assessment by the teacher.

A. Progressive Assessment (PA) Guidelines and criteria :

The assessment of the students in the fifth semester Progressive Assessment (PA) for 25 marks is to be done based on following criteria.

Sr. No.	Criteria	Marks
1	Topic Selection	5
2	Regularity in Seminar work as mentioned in Diary	5
3	Overall understanding capability	5
4	Progress in work and efforts displayed (Interactions with Q & A)	10

B. End Semester Assessment(ESE) criteria/Term Work assessment criteria :

The assessment of the students in the fifth semester end-semester-examination (ESE) for 25 marks is to be done as per RUBRICS of Annexure V. This assessment shall be done by the faculty.

7. **THEORY COMPONENTS**
NA
8. **SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN**
NA
9. **SUGGESTED STUDENT ACTIVITIES**
NA
10. **SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)**
As per the guidelines mentioned in Annexure-I or any other guidelines given by faculty.
11. **SUGGESTED MICRO-PROJECTS**
NA
12. **SUGGESTED LEARNING RESOURCES**
As per the guidelines mentioned in Annexure-I or any other guidelines given by faculty.
13. **SOFTWARE/LEARNING WEBSITES**
NA

14. PO/PSO - COMPETENCY- CO MAPPING

- **Mapping Course Outcomes With Program Outcomes:**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
Analyze and study new technologies.	3	2	-	-	-	1	3
Apply technical knowledge.	3	2	-	-	-	1	3
Compile and Write a Seminar Report	1	-	-	-	-	1	3
Work independently and deliver presentations.	1	-	-	-	-	1	3

- **Mapping Course Outcomes With Program Specific Outcomes:**

GO /PSO	PSO1	PSO2
Analyze and study new technologies.	2	2
Apply technical knowledge.	2	2
Compile and Write a Seminar Report	1	2
Work independently and deliver presentations.	3	3

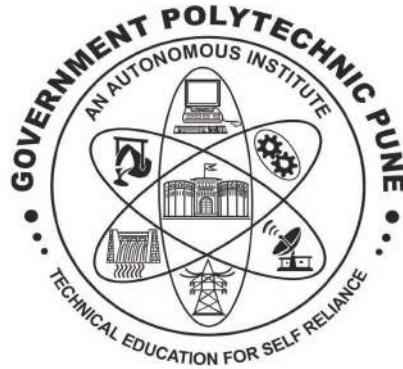
Annexure-I

Seminar Report Guideline

1. All students should submit their seminar report to their respective guide on or before _____.
2. Seminar report must include
 1. Cover Page
 2. Certificate
 3. Acknowledgement
 4. Index
 5. Abstract
 6. Chapters (as per discussion with guide)
 7. References/Bibliography
3. The page size of the seminar report should be in A4 size.
4. The seminar report should be **Spiral bonded**.
5. Two copies of the report (hard copy only). One for self and one to be submitted to department.
6. **Page Numbering (Centered having format Page No__ of __)**
7. **Paper Size:** A- 4 size paper
 1. **Margins :**
 - Top:** 1” (1 inch=2.54cm)
 - Bottom:** 1.15” (2.86cm)
 - Left:** 1.5”
 - Right:** 0.6”
 2. **Line Spacing:** 1.5 line
 3. **Title of Chapter**
 - Font:** Times New Roman (Bold face)
 - Size:** 14 point
 - Alignment:** Centre
8. **Text**
 - Font:** Times New Roman
 - Size:** 12 point
 - Alignment:** Justified (Full Text)
9. **Figures and Tables:**
 - a. **Font:** Times New Roman (**Bold**)
 - b. **Size:** 12 point
 - c. **Alignment:** Centered
 - d. **Figure Caption must be below the figure and centered**
 - e. **Table caption must be above the table and centered**

Annexure-II

Government Polytechnic, Pune-16
(An Autonomous Institute of Government of Maharashtra)



A
Seminar Report
On

“SEMINAR TITLE”

SUBMITTED BY:

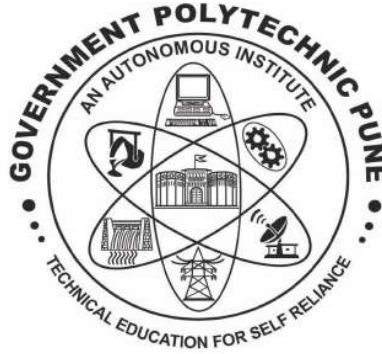
<Name of the student>

Under the Guidance of

<Guide Name>

DEPARTMENT OF
DRESS DESIGNING AND GARMENT MANUFACTURING
(Academic Year: 2019-20)

Government Polytechnic, Pune-16
(An Autonomous Institute of Government of Maharashtra)
Department of Dress Designing and Garment Manufacturing



CERTIFICATE

This is to certify that Ms/Mr. _____ with Enrollment No. _____, of Third Year Diploma in Dress Designing And Garment Manufacturing has successfully completed the seminar titled “ _____ ” as part of his/her diploma curriculum in academic year 2019-20.

Seminar Guide
(Shri/Smt. Name of Guide)

H.O.D
(Name of HOD)

Principal
(Dr. V. S. Bandal)

ACKNOWLEDGEMENT

Acknowledgement should be prepared by the students in their wordings expressing their gratitude towards department.

Government Polytechnic Pune

Department of Dress Designing And Garment Manufacturing

General Guideline

for

Seminar-DD4103

Annexure-III

Department of Dress Designing And Garment Manufacturing GENERAL SEMINAR GUIDELINES (Odd 2019)

Purpose of carrying out Seminars is to develop self learning capability of students wherein they will be able to apply the knowledge gathered to a new technology, understand it and deliver the presentations accordingly. All students must follow the guidelines given below :

- Seminar Presentation should be on Technical Topic only. The topic (technology) chosen may be related to perspective project.
- Seminar topic contents cannot be the contents of their Diploma course.
- Evaluation of Seminar should be based on Topic Selection, Technical Contents, Content Understanding, Content Delivery and Response to the Questions.
- Seminar topics across all students must not be repeated.
- Seminar Topics of last year should not be repeated.
- Each student has to collect 3-4 topics, present their abstract to guide, discuss with guides and finalise topics through number of discussions. Abstract must also contain key terms in topics.
- Each abstract should not exceed 200 words.
- Abstract must be written with grammatically correct statements. Shortcuts must not be used for any words and should not contain spelling mistakes with neat and clean handwriting.
- Each student must prepare and attach the seminar diary to their Seminar Reports containing:
 - Table I .
 - Abstract of 3-4 topics with keywords.
- Every student must report to respective guide as per timetable, perform necessary work and submit as per plan, get necessary attestations on activities done in seminar diary on due dates and time as per Time Table.

Annexure-IV

SEMINAR DIARY

Name of the Student: _____ Name of Guide (Faculty) : _____
Enrollment Number: _____ Semester: _____ Batch Number: _____





Date	Discussion Topics/Activity Details	Work Allotted Till Next Session/ Corrections Suggested/Faculty Remarks	Dated Signature of Faculty

Dated Signature of Faculty

Dated Signature of HOD

Annexure-V**Rubrics**

Seminar Term work(50)										
Topic Selection(5)	Regularity in Seminar Work(5)	Overall understanding capability(5)	Knowledge (Q & A) (10)	Presentation(20)				Report Writing(5)	Total Out of (50)	Marks mapped to (25)
				Speech Clarity (5)	Body Language(3)	Neat Dressing(2)	Slides (10)			

Sign:  Name: Mrs. A.B. Bhusagare (Course Expert)	Sign:  Name: Mrs. M.U. Kokate (Program Head and Course Expert) (Information Technology)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zampure (CDC In-charge)

Government Polytechnic, Pune

'180OB'– Scheme

Programme	Diplôma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Appreciation of Indian Costumes
Course Code	DD4104
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
				Theory		Practical		
L	T	P	C	ESE	PA	*ESE	PA	200
				Marks	80	20	50	
04	00	02	06	Exam Duration	03Hrs	01Hrs	--	--

(*): **PE (Practical Examination)**

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of evolution of Indian costumes, which simply gloss over those early periods and the traditional customs of different states with the diversified traditional Indian ornaments.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Analyze tradition textile and draping style according to region.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency

1. Interpret purpose of clothing
2. Describe wearing styles of costumes used in different regions of India
3. Create contemporary versions based on traditional costumes.
4. Distinguish ensemble from Northern region.
5. Interpret draping according to region.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	The Western Deccan – Window Display on- Maharashtra- Deccan Sari,Shallu Sari,Paithani Sari,Parsi Sari,Khan,Himaroo Shawls,Himrus	1,2,3,4,5	02
2.		The Western Region Window Display on- A)Rajasthan- Hand Block Printed Sari,Nandana,Bandhej, The Leheriya,Pabujipar		
3.		Window Display on- B) Gujarat- Mochi Embroidery, Mata – ni – Pachedi,Patan Patola,Roghan work,Tinsal Sari,Gujarati Brocades,Maheshwari Sari	1,2,3,4,5	02
4.		The Eastern Region- Window Display on- A) Bengal- Bengali Deshi Muslin, Dacca Muslins,Jamdani Muslins, Bengali Sari, Baluchari – Buttedar Sari	1,2,3,4,5	02
5.	2	Window Display on- B) Bihar- Tasar Silk Sari,Khadi – Sari, Banaras Brocades	1,2,3,4,5	02
6.	3	The North East Region Window Display on- A) Assam- Muga Golden Silks,Asonai Designs or Tribal Designs of Assam.	1,2,3,4,5	02
7.		Window Display on- B) Manipur- Wild Silk Sari and Men’s attire		
8.		Window Display on- C) Orissa- Double Ikat Sari,Pochampalli Ikat,Batik & Kalamkari Sari,Gadwal Sari	1,2,3,4,5	02
9.		The South Region- Window Display on- A) Tamilnadu- Kornad Sari,Kosara Padava,Kuchipuram Sari,Kora Silk	1,2,3,4,5	02
10.		Window Display on- B) Clothing culture of Karnataka	1,2,3,4,5	02
11.	4	Window Display on- C) Clothing culture of Andhra Pradesh	1,2,3,4,5	02
12.		The North Region-	1,2,3,4,5	02

		Window Display on- A) Jammu & Kashmir-Kashmiri Shawl,Jamawar Shawls		
13.		Window Display on- B) Clothing culture of Uttar Pradesh	1,2,3,4,5	02
14.	5	Window Display on- C) Clothing culture of Himachal Pradesh	1,2,3,4,5	02
15	All	Complete a micro project based on guidelines provided in Sr. No. 11	1,2,3,4,5	04
Total Hrs				32

Note:-

1. A group of 4 to 5 students will prepare window display as per instructions.
2. Remaining students will prepare PPT's on that display as an assignment.

Sr.No.	Performance Indicators	Weightage in %
a.	Study of Traditional attire.	20
b.	Observing the draping style	20
c.	Collection of textile.	10
d.	Backdrop Creation for window display	10
e.	Power point presentation	20
f.	Answer to sample questions	10
g.	Completion in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Various stackers for window display.	1 to 15
2	Lights to focus display.	
3	Props according to region	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. Introduction to Clothing (08hrs,08marks)	
1 a. State the purpose of clothing. 1b. Explain history of clothing according to era. 1c. Distinguish between clothing of Sultan era and British era.	1.1 Purpose of Clothing 1.2 History of Indian Costume during British period & After. 1.3 History during the era of Sultan & Mughal Emperors.
UNIT 2 Southern Region (12hrs,16marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
2a. Enlist ornaments used in southern region of India. 2b. State the wearing features of dhoti of Maharashtra. 2c. Explain Panchagachcham and Trikachcham. 2d. Give the steps for Wearing style of Sari-Koorgi women	2.1 Maharashtra 2.1.1 Maharashtra Sari Drape Sakachcha Nesana & Choli 2.1.2 Dhoti and Sadra. 2.1.3 Ganjipharak, Bandi and Pheta 2.1.4 Ornaments 2.2 Tamilnadu 2.2.1 Wearing of Dhoti (Panchagachcham, Trikachcham.), 2.2.2 Komanam (Langoti), Angavastram, Kamarband, Marapu. 2.3 Karnataka 2.3.1 Dhotra, Panche, Jubba, shlya or Angavastra, Pheta, Kuppasa, Kachcha, 2.3.2 Wearing style of Sari-Koorgi women
UNIT 3 Northern Region (12hrs,14marks)	
3a. Illustrate Pheran. 3b. Enlist the ensembles worn in Punjab. 3c. Explain the wearing of Punjab-Men.	3.1 Kashmir 3.1.1 The General Garment-Men & Women. (Pheran, Salwar, Chadar, Skull – Cap etc.) 3.1.2 Ornaments 3.2 Punjab : 3.2.1 Khes, Tehmed, Kurta, Pajama, 3.2.2 Salwar, Kameez, Orhani, Churidar, Ghagra, Kurti, 3.2.3 Turban. 3.2.3 Ornaments
UNIT 4 Western Region-1 (12hrs,14marks)	
4a. Explain the wearing of Gujarat female with appropriate illustration. 4b. Distinguish between the dresses of people of Kutch & Saurashtra. 4c. Enlist the ornaments worn in Gujarat. 4d. Explain the wearing features of dhoti worn in Gujarat	4.1 Gujarat 4.1.1 Study of Men's Costume-Dhotiya / Badana Potadi / Paهران / Jabbhoh Paghadi. 4.1.2 Study of Women's Costume-Chaniya – Choli, Orhani, and Kanchali. 4.1.3 Difference in the dress of people of Kutch & Saurashtra. 4.1.4 Ornaments
UNIT 5 Western Region-2 (08hrs,12marks)	
5a. Explain the wearing of Rajasthan female with appropriate illustration. 5b. Illustrate Jodhpur – Breeches of Rajasthan. 5c. Enlist the ornaments worn in Rajasthan. 5d. Explain the wearing features of dhoti worn in Rajasthan.	5.1 Rajasthan 5.1.1 Costume of Men-Dhoti, Bandia – Angarkha, Potia, Achakan, Jodhpur – Breeches, Pichranga Pagadi, Kamarband. 5.1.2 Costume of Women – Ghagra Choli, Orhani 5.1.3 Ornaments
Unit –6 Eastern Region (12hrs,16marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
6a. Explain the features of Mekhla of Assam. 6b. Enlist the ensembles worn in Himachal Pradesh. 6c. State the headgears worn in Sikkim. 6d. Mention steps for wearing style of Bengali Sari	6.1 Assam 6.1.1 Study of the Mekhla 6.2 Himachal Pradesh 6.2.1 Kurta, Sadri, Jurkhi, Suthan, Gachi, Bushari cap. 6.3 Sikkim 6.3.1 Daura, Surwal, Ash-Coat, Dhaka Topi, Patuka, Khukuri, Chaubandhi choli 6.3.2 Men-Fo-Kho, Kerak, Kho, 6.4 Meghalaya 6.4.1 Jainsem, Tapmohkhlieh, Jaincup. 6.5 Bengal 6.5.1 wearing style of Sari 6.5.2 Dhoti, Kurta

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Clothing	08	03	01	04	08
II	Southern Region	12	10	01	05	16
III	Northern Region	12	08	02	04	14
IV	Western Region-1	12	08	03	03	14
V	Western Region-2	08	05	02	05	12
VI	Eastern Region	12	10	02	04	16
Total		64	44	11	25	80

9. SUGGESTED STUDENT ACTIVITIES:

Other than class room and laboratory activities following are the suggested guided co curricular student's activities which need to be undertaken to facilitate the attainment of various course outcomes of this course. The students are required to maintain portfolio of their experiences which he/ she will submit at the end of the term.

- Students should maintain a notebook where all the new word which are used in costume designing.
- Collect the region-wise ornaments.
- Visit to art exhibition for study of India costume.
- Collect videos of traditional draping through internet.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES:

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).

- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Demonstration for draping garment.
- j. Live modeling.
- k. Arrange the work shop for draping.
- l. Region-wise costume shown by video.

11. SUGGESTED MICRO-PROJECTS:

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Students should prepare design collection by doing sketching and rendering the traditional costumes/accessories-
 1. The era of Sultan & Mughal Emperors.
 2. Southern Region
 3. Northern Region
 4. Western Region-1
 5. Western Region-2
 6. Eastern Region
 7. Many more.....

12. SUGGESTED LEARNING RESOURCES:

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	The Sari	Linda Lyntan	ISBN:0500016720
2	Indian Costumes	A Biswas	-----
3	World Dress	Rosemary Crill,Publisher:V& A publishing,2009 year	ISBN:1851775684
4	History of fashion	Gorsline Douglas,Batsford,Ltd.1993 year	ISBN:0713474459

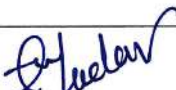
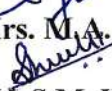



13. SOFTWARE/LEARNING WEBSITES-

- 1.www.maharashtratourism.net
- 2.www.marathiheritage.com
- 3.www.indianscriptures.com
- 4.www.indianetzone.com
- 5.www.traditionalclothingindia.blogspot.in
- 6.www.drawingcroquis.blogspot.in
- 7.www.discoveredindia.com
- 8.www.Rajasthantextile.com
- 9.www.sareesafasi.com

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-
CO3	2	1	2	1	1	-	-
CO4	-	3	2	-	1	-	-
CO5	-	3	2	-	1	-	-

	PSO1	PSO2
CO1	-	3
CO2	3	1
CO3	2	1
CO4	1	2
CO5	-	-

Sign:  Name: Mrs. M.A. Yadav  Name: Ms. S.M. Waghchaure (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB'– Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Appreciation of World Costumes
Course Code	DD 4105
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory		Practical		Total Marks
L	T	P	C	ESE	PA	*ESE	PA	
04	00	02	06	Marks	80	20	50	50
				Exam Duration	03Hrs	01Hrs	--	--

(*): **PE (Practical Examination)**

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides knowledge and study of diversity in folk costumes through out the world and how clothing evolved, changes and adapts to culture. It gives insight about costumes in different country and also gives glimpse of their taste.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop contemporary pattern through the study of world costume.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Discover costumes of Scotland.
2. Identify garments of Hawaii.
3. Explain dressing style of Indonesia.
4. Categorize dressing styles used in china and Japan.
5. Demonstrate clothing used in Egypt, Rome and Greece.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Window display on- 1. Clothing culture of Scotland	1	04
2.	2	Window Display on- 1. Clothing culture of Hawaii	2	04
3.	3	Window display on- 1. Clothing culture of Indonesia	3	04
4.	4	Window display on- 1. Clothing culture of China	4	04
5.	5	Window display on- 1. Clothing culture of Japan	4	04
6.	6	Window display on- 1. Clothing culture of Egypt	5	04
7.	7	Window display on- 1. Clothing culture of Rome and Greek	5	04
8.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	04
Total				32

Sr.No.	Performance Indicators	Weightage in %
a.	Study of World attire.	20
b.	Observing the draping style	20
c.	Collection of textile.	10
d.	Backdrop Creation for window display	10
e.	Power point presentation	20
f.	Answer to sample questions	10
g.	Completion in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Various stackers for window display.	1 to8
2	Lights to focus display.	
3	Props according to country	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section-I	
UNIT 1. Scotland (08 hrs,10marks)	
1a.Acquire the dressing style of high land dress of Scotland 1b.Identify textiles of Scotland.	1.1 Scotland 1.1.1 The kilt (As worn at special gatherings as a Highland Dress) 1.1.2 Knowledge of Male's -Casual dress, Semi-formal dress, The full formal dress. 1.1.3 Female traditional dress 1.1.4 Knowledge of tartan
UNIT 2 Hawaii (08 hrs,08marks)	
2a.Summarize the dressing style of men's and women's Costume of Hawaii. 2b.Describe the Tapa prints of Hawaii	2.1 Hawaii 2.1.1 Aloha Shirts (Hawaii Shirts) 2.1.2 Features of Muu-Muu Costume 2.1.3 Hulla Dance costume 2.1.4 Knowledge of Tapa (Prints) 2.1.5 Process of Tapa print
UNIT 3 Indonesia (08 hrs,08marks)	
3a. Identify the male costumes of Indonesia . 3b.Classify female costume of Indonesia.	3.1Indonesia 3.1.1Male costume of Indonesia 3.1.2Female costume of Indonesia 3.1.3 Features of Kebaya, Kain, Stagen and Salendang 3.1.4Accessories of Indonesian male and female
UNIT 4 China (10 hrs,14marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
4a.List types of Myths and symbols of china. 4b.Distinguish make-up and hair style for young and married women. 4c.Describe the costume of Manchu Women. 4d.Define Cheongsam.	4.1China 4.1.1 Knowledge of certain Myths and Symbols 4.1.2 The Phoenix 4.1.3The Dragon 4.1.4 The Unicorn 4.1.5 The costume of Manchu Men and Women 4.1.6 The Cheongsam 4.1.7 Modern Dress in China 4.1.8 Foot Binding Process in China 4.1.9 Knowledge of Make up and typical Hair Styling used differently for young and married Woman. 4.2 Accessories of Chinese male and female 4.2.1Textile used in China
Section-II	
UNIT 5 Japan (10 hrs,14marks)	
5a.Compare garment worn by Kings and by common man. 5b.Describe types of Kimono. 5c.Elaborate Bridal attire. 5d.Summarize the knowledge of under clothes. 5e.Determine the layers of Junihitoe	5.1Japan 5.1.1 Garments worn by Royalty and Common Men's attire. 5.1.2 Kimono as worn in its different forms -Yukata,Junihitoe, Kosode, Furisode , Kamishimo(Kimono as worn by samurai) 5.1.3 Japanese Bridal attire 5.1.4 Knowledge of Under Clothes -Hadajuban, Susoyoke Date-Eri. 5.1.4 Knowledge of OBI 5.1.5 Accessories for OBI 5.1.6 Accessories of Japanese male and female 5.1.7 Textile used in Japan
Unit –6 Egypt (10 hrs,12marks)	
6a.Explain the types of men's clothing used in Egypt. 6b.Summarize the knowledge of body decoration and accessories. 6c. Elaborate the women's costume.	6.1Egypt 6.1.1 Men's clothing – Old, Middle and New Kingdom 6.1.2 Women's clothing – Old, Middle and New Kingdom 6.1.3 Body decoration – Tattooing 6.1.4 Ancient Egypt Accessories 6.1.5 Importance of Cosmetic 6.1.6 Textile used in Egypt
Unit –7Rome & Greece (10 hrs,14marks)	
7a.Explain Roman clothing of men and women. 7b.Appriciate Roman Military costume. 7c.Select motives used in Greece. 7d.Describe draping style of	7.1Rome & Greece 7.1.1 Roman Clothing – Toga,Himation, Exomis,Cloak and wraps ,Tunica, Lacerna, Sabligaculum. 7.1.2 Women's clothing –Stola, Tunica and Palla 7.1.3 Roman Military Costume 7.2 Greece (3000 BC)(Ancient motives)

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Greek costume.	7.2.1 Costume used in 6 th BC-Doric Chiton, Tunic, Chlamys, Peplos Doric, Peplos Ionic. 7.2.2 Dressing in 1970, Dressing in 1980, Dressing in 1990 7.2.3 Textile used in Rome & Greek. 7.2.4 Accessories of Ancient Rome & Greek

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
SECTION-I						
I	Scotland	08	03	01	04	10
II	Hawaii	08	03	01	04	08
III	Indonesia	08	03	01	04	08
IV	China	10	08	03	03	14
SECTION-II						
V	Japan	10	05	04	05	14
VI	Egypt	10	08	03	03	12
VII	Rome & Greece	10	05	04	05	14
Total		64	35	17	28	80

9. SUGGESTED STUDENT ACTIVITIES:

Other than class room and laboratory activities following are the suggested guided co curricular student's activities which need to be undertaken to facilitate the attainment of various course outcomes of this course. The students are required to maintain portfolio of their experiences which he/ she will submit at the end of the term.

- Students should maintain a notebook where all the new word which are used in costume designing.
- Collect the region-wise ornaments.
- Visit to art exhibition for study of India costume.
- Collect videos of traditional draping through internet.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.8, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with power plant system and equipments.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its applications
- h. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In the first four semesters, the micro-project are group-based. However, in the fifth and sixth semesters, it should be preferably be **individually** undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than **16 (sixteen) student engagement hours** during the course. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Collection of photos of Scotland country clothing culture.
- b. Power point presentation on the culture of a Hawaii country, in group of two/three students.(Duration:10 minutes) .
- c. Power point presentation on the clothing of Indonesia country, in group of two/three students.(Duration:10 minutes)
- d. Power point presentation on the tradition clothing of Rome country, in group of two/three students.(Duration:10 minutes)
- e. Power point presentation on the tattooing process of Egypt country, in group of two/three students.(Duration:10 minutes)
- f. Power point presentation on the culture of a China country, in group of two/three students.(Duration:10 minutes)
- g. Prepare a report on the sign and symbols of Egyptian.
- h. Prepare a report on the “Ranks of OBI” in Japan.
- i. Prepare handouts for the given topic.- Foot Binding Practice in China.
- j. Prepare display chart on types of accessories used in Indonesia.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Encyclopaedia of World Dress and Fashion	Janne. B.Eicher ,Publisher-Berg-2010	ISBN:9781847883902
2	Costume and fashion	James Laver Publisher-Thames and Hudson-2012	ISBN:9780500204122

13. SOFTWARE/LEARNING WEBSITES-

www.hachettechildrens.co.uk





www.laurenceking.com

www.bookdepository.com

14. PO /PSO- COMPETENCY- CO -MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	-	-	-	-	-	-
CO2	-	2	-	1	1	-	-
CO3	2	1	2	1	1	-	-
CO4	-	3	2	-	1	-	-
CO5	-	3	2	-	1	-	-

	PSO1	PSO2
CO1	-	3
CO2	3	1
CO3	2	1
CO4	1	2
CO5	-	-

Sign:  Name: Ms. N.V. Gondane (Course-Expert)	Sign:  Name: Mr. V.G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Portfolio Development
Course Code	DD4106
Prerequisite course code and name	DD3104-Illustration Techniques
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C	ESE	PA	*ESE	PA		
				Marks	--	--	100	50	150
00	00	04	04	Exam Duration	--	--	--	--	

(*): **PE -Practical Examination**

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the visualization of idea from board to final design. It develops the skill of accessories designing, Theme based designing for the client. It also teaches the presentation technique to give an accurate result.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Develop Design boards on current trends and create unique garments line using technical aspects.**

4. COURSE OUTCOMES (COs)

The practical experiences associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Prepare sequential fashion portfolio with logo and labels.
2. Apply knowledge of recent trends in designing.
3. Create a garment line based on design boards.
4. Design portfolio with illustration to reveal creativity.
5. Develop innovative accessories.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	Front Page Designing- Design logo and Portfolio Cover page (Computerized/Manual)	1,2	02
2	2	Label Creation-Use suitable color combination, font size and font Style (Computerized/Manual) Design and Render Tags and Hang Tags	1,2	04
3	3	Design and Render Product Packaging Box, Eco-Friendly Shopping Bag (Three Dimensional)	1,2	04
4		Design and Render Price Tag, Size Tag with Detailing.	1,2	04
5	4	Theme Based Designing Stage Event/TV Show Boards- Collage Creation (Manual/ Computerized) Inspiration Board, Mood Board, Color and Swatch(Fabric) Board Design Development - Illustrate(Men, Women or Kid) Five to Seven Theme Based Garment Line With Accessories use Design Mixed with Flats with Suitable Page Composition and Backdrop Concept Board- Spec Sheet and Cost Sheet of Any One garment in the Collection	2,3,4	12
6		Theme Based Designing Ramp Wear-Fashionable Technology Theme (The intersection of Design, Science and Technology) Boards- Collage Creation (Manual/ Computerized) Inspiration Board, Mood Board, Color and Swatch(Fabric) Board Design Development - Illustrate(Men, Women or Kid) Five to Seven Theme Based Garment Line With Accessories use Design Mixed with Flats with Suitable Page Composition and Backdrop Concept Board- Spec Sheet and Cost Sheet of Any One garment in the Collection	2,3,4	12
7		Theme Based Designing Store/Brand – Traditional Handicraft Theme Boards- Collage Creation (Manual/ Computerized) Inspiration Board, Mood Board, Color and Swatch (Fabric) Board Design Development - Illustrate(Men, Women or Kid) Five to Seven Theme Based Garment Line With Accessories use Design Mixed with Flats with Suitable Page Composition and Backdrop Concept Board- Spec Sheet and Cost Sheet of Any One garment in the Collection	2,3,4	12

8	5	Theme Based Accessories Designing Accessories Designing – Indian Heritage Theme Boards- Collage Creation (Manual/ Computerized) Inspiration Board, Mood Board, Color and Swatch (Fabric) Board . Design Development - Design and Render Four Theme Based Accessories with Suitable Page Composition and Backdrop Concept Board- Spec Sheet and Cost Sheet of Any One garment in the Collection	2,4,5	10
9	All	Complete a micro project based on guidelines provided in Sr. No.11	1 to 5	04
Total Hrs				64

Sr.No.	Performance Indicators	Weight in %
a.	Sketching	20
b.	Collage Creation	20
c.	Designing	20
d.	Render with suitable Colors Combination.	20
e.	Page Composition and Presentation	10
f.	Completion of Work and Neatness	10
Total		100

Note- Prepare a Soft copy of all above Assignment and submit.

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Drawing Table and Drawing Board	1 -9
2	Stationery Material-Drawing Sheets A3 Size, Scissor.	1 -9
3.	Colouring Material-Poster Color, Staddlers, Markers, etc	1 -9

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN - NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- Cut and Stitch Single Garment based on above any one theme
- Collect Hand Tags, Size Tag, Price Tag of Different brands and prepare a Report
- Prepare the Detail Curriculum Vitae (CV)

- d. Drape a creative Non-wearable garment on Dummy and prepare a stepwise report.
- e. Embellish-Cut-Stitch a Garment /Accessories on Selected Handicraft.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Use Flash/Animations to explain various components and its application..
- f. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO PROJECTS-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Prepare a Report on industrial based final design collection.
- b. Prepare a Report on Current movie costume and accessories.
- c. Prepare a Report on TV shows/Stage show Costume.
- d. Prepare a portable Library on trendy Color.
- e. Prepare a portable Library on trendy Texture .
- f. Prepare a portable Library on well known Styles
- g. Prepare a portable Library on Trend Embellishment/Surface Ornamentation.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Portfolio	Author-Anna Kiper Publisher-Batsford (August 2016)	ISBN-10:1849940851 ISBN-13:978-1849940856
2	Pro Fashion Sketch Pad- Design and Build your Pro Portfolio	Author-Aemiliana Magnus Publisher-Create space independent publishing platform (sep 2018)	ISBN-10:1719342504 ISBN-13:978-1719342506
3	Mens Wear Fashion Illustration Resource book	Author-Irina Ivanova Publisher-Art Design Project incorporated May 2017	ISBN -10-0692608648 ISBN-13-978-0692608647
4	Childrens Wear Fashion Illustration Resource book	Author-Irina Ivanova Publisher-Art Design Project incorporated May 2015	ISBN-10:0692554076 ISBN-13:978-0692554074
5	Portfolio Design for Accessories	Author- Publisher-Fashion Research foundation publishing(March 2011)	ISBN-10: 0984117121 ISBN-13: 978-0984117123





13. SOFTWARE/LEARNING WEBSITES

1. Logo Designing- <https://youtu.be/4MxRhjHmiVWw>
2. Technical Drawing-<https://za.pinterest.com/mmmmbeti/sketches-flats-technicalspecs/>
3. Fashion Portfolio-www.purfe.com.au
4. Handicrafts of India- <https://www.youtube.com/watch?v=4B5iSH7zdUk>
5. Hanmade in India- https://www.youtube.com/watch?v=N_4zZHBB3aE
6. India Craft-<https://www.youtube.com/watch?v=0DZYG37YiFk>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	-	-	2	1	3
CO2	2	2	2	-	2	2	2
CO3	2	-	-	-	-	2	1
CO4	2	-	-	-	2	2	2
CO5	3	-	-	-	-	2	2

	PSO1	PSO2
CO1	2	-
CO2	3	3
CO3	3	3
CO4	2	2
CO5	1	3

Sign:  Name: Mrs. P. V. Toshniwal (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Digital Design Studio
Course Code	DD4107
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				Total Marks	
					Theory		Practical			
L	T	P	C		ESE	PA	*ESE	PA		
					Marks	--	--	50	50	100
00	00	04	04		Exam Duration	--	--	--	--	

(*): *PE (Practical Examination)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In recent times Computer Aided Designing is essential tool for garment manufacturers. The foundation of apparel industry is based on CAD. This course has been developing skills of digital pattern making. After completion of this course student will be able to draft, grade and lay mark the garment pattern.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Customize the patterns as per Industry standards.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency-

1. Draft the garment pattern as per specifications.
2. Grade the garment pieces as per size chart.
3. Plan Marker for garment with high fabric efficiency.
4. Develop pattern as per industry standards.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	DGS-Module Use Size Chart.	1,4	04
2.		Draft a basic skirt block with darts, grain line & sew line.	1,4	06
3.		Draft a basic shirt Block, sleeves, pocket buttons & notches marking.	1,4	06
4.		Draft a pleated Skirt with yoke style.	1,4	04
5.	2	Draft an A-line Princess block with seam allowance, pattern join and symmetry.	1,4	04
6.	3	Drafting a Blazer or waist coat with shrinkage tool.	1,4	06
7.		Select Edit size table, angle grading, Color set up in Grading, curve adjust & cap nesting.	2,4	04
8.		Grading of a Skirt block.	2,4	02
9.		Grading of a pleated Skirt with yoke.	2,4	02
10.		Grading of a Princess cut A-line.	2,4	02
11.	4	Marker Making Estimate marker by using tools i.e. custom tool bar.(auto nesting)	3,4	04
12.		Discover tools like Material pattern, unfold patterns, cut pieces, super nest & set up.	3,4	04
13.		Prepare a marker with stripes & all over print. (prepare a marker for set of 50 - S,M,L -1:2:1)	3,4	12
	5	Prepare a marker for one directional floral prints & knit material with super nesting. (prepare a marker for set of 150 -S,M-L -2:2:1)		
14.	All	Complete a micro project based on guidelines provided in Sr. No 11	1 to 4	04
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Use of tools (required for assignment)	20
b.	Accuracy in Drafting/grading/marker	50
c.	Presentation	20
d.	Regularity and timely completion	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr. No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Richpeace Software V-10 DGS Module	1,2,3,4,5,6,7,8,9,10
2	Richpeace Software V-10 marker Module	11,12,13,14

7. THEORY COMPONENTS

NA

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

NA

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare a list of software's used in garment industry.
- Search information about Tuka cad & Lectra systems.
- Collect information of fabric saving in garment industry after using CAD/ Richpeace.
- Manipulate a skirt block and prepare culottes.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with automation.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and its application.
- Teacher should ask the students to go through instruction and Technical manuals
- Correlate subtopics with Richpeace and CAD.
- Use proper equivalent analogy to explain different concepts.
- Use of ICT to explain various components, operation and software's.

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. (Affective Domain Outcomes). Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Collect specification details of software's used for garment and textile design.
- a. Develop a textile print by using any open source software or application (app.)
- b. Enlist types of software's used Knit wear textile design.
- c. Design 2D or 3 D garment or apparel by using open source.
- d. Prepare a layout/lay mark for any garment industry.
- e. Prepare visit report on garment industry and its design department.
- f. Collect information about fabric wastage in garment industry with manual work.
- g. Prepare a comparative table on manual layout and computerized layout.
- h. Prepare a report on use of software's for virtual fashion or virtual dressing room.

12. SUGGESTED LEARNING RESOURCES

NA

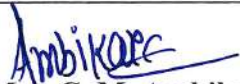



13. SOFTWARE/LEARNING WEBSITES

1. <http://www.richpeace.com/GarmentCAD-show-379.html>
2. http://download.richpeace.cn/en/manual/RICHPEACE_DGS+GMS_Manualv8v9.pdf
3. <http://garmentszatra.com/procedure-and-working-flow-chart-in-apparel-industry/>
4. <https://www.youtube.com/watch?v=YKbwio4ocIE>
5. <https://www.youtube.com/watch?v=MXvnfPOKG4s>
6. https://www.google.com/search?q=Advantages+of+CAD/CAM+in+fashion+industry&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjQ27n94pj0AhVWSX0KHfC4BjgQ_AUoAXoECAEQAw&biw=1536&bih=792&dpr=1.25#imgrc=jOQm_9khGVlrYM&imgdii=rc6TJXljRY4DBM

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	1	1	3	1	2	2
CO2	2	2	-	2	-	1	-
CO3	2	-	1	1	-	1	1
CO4	2	2	2	2	-	1	1

	PSO1	PSO2
CO1	2	-
CO2	2	-
CO3	2	-
CO4	2	2

Sign:  Name: Mrs. C. M. Ambikar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Surface Techniques
Course Code	DD 4108
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
L	T	P	C		ESE	PA	*ESE	PA	200
04	00	04	08	Marks	80	20	50	50	
				Exam Duration	03Hrs	01Hrs	--	--	

(*): PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of history, origin, motifs, material and methods of construction used in various states for garment ornamentation. These traditional ornamentation techniques used as value addition elements for any garment and textile to enhance beauty, usability and quality of the garment and textile.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Understand and analyze traditional ornamentation techniques used across various states of India.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency

1. Interpret purposes of surface ornamentation techniques.
2. Describe material required and method used for various ornamentation techniques.
3. Select appropriate surface ornamentation techniques and motif.
4. Create contemporary versions of ornamentation techniques
5. Implement surface ornamentation techniques suitable for particular garments/ textiles.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Traditional Textile Painting Techniques	1	4
		Preparing any two sample using above painting techniques- Madhubani painting of Bihar, Warli painting of Maharashtra, Kalighat painting of West Bengal, Gond painting by tribal in India		
2.		Window Display on- Phad painting of Rajasthan, Patachitra painting of Orissa, Tanjore painting of South India and Kerala Mural painting	1	2
3.	2	Traditional Ornamentation Techniques	2,3	2
		Preparing sample of embroideries of Northern India-Kashida of Kashmir		
		Preparing sample of embroideries of Northern India-Phulkari of Punjab		
		Preparing sample of embroideries of Northern India-Chamba Rumal of Himachal Pradesh		
		Preparing sample of embroideries of Western India-Kutch and Kathiawar Embroideries of Gujrat		
		Preparing sample of embroideries of Western India-Parsi Embroideries of Mumbai		
		Preparing sample of embroideries of Central India-Chikankari of Uttar Pradesh		
		Preparing sample of embroideries of Southern India-Kasuti of Karnataka		
		Preparing sample of embroideries of Southern India-Lambadi Embroideries of Andhra Pradesh		
		Preparing sample of embroideries of Eastern India-Kantha of Bengal		
		Preparing sample of embroideries of Eastern India-Sujani of Bihar		
		13.		
Preparing sample of Patch work				
Preparing sample of Applique				
14.		Preparing sample of Quilting	2,3	4
16.	4	Artefact Embroidery Techniques	4	2
		Preparing sample of using following embroidery technique- Sequin Work, Gold and silver wires work, Bead work		
17.		Preparing sample of using following embroidery technique- Hand Aari work, Jardozi work, Sheesha work and Cut work	4	2

18.		Preparing sample of using Fabric Manipulation technique	4	2
19.		Preparing sample of using Smoking	4	2
20.	5	Yarn Crafting Techniques	1	2
		Make collection of various types of laces		
21.		Preparing sample of braids	2,3	2
22.		Preparing sample of crochet	2,3	2
23.		Preparing sample of Macrame	2,3	2
24.		Preparing sample of Fringes and Tassels	2,3	2
25.	6	Traditional Textile's Dying and Printing Techniques	4	4
		Preparing samples of Tie & Dye		
26.		Preparing samples of Batik	4	2
27.		Preparing samples of Block Print	4	2
28.	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	4
Total Hrs				64

Sr.No.	Performance Indicators	Weightage in %
a.	Study of traditional textiles and embroideries	20
b.	Observation motifs, color combinations, material required and method of construction	20
c.	Collection of embroideries, paintings and laces	20
d.	Backdrop creation for window display	10
e.	Power point presentation	10
f.	Answer to sample questions	10
g.	Completion in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Various stackers for window display.	1 to 28
2	Lights to focus required for window display.	
3	Props according to region required for window display	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section-I	
UNIT 1. Introduction to Garment Ornamentation (10hrs,12 marks)	
1a. Memories history of garment ornamentation. 1b. Explain the role of “Pattern Books”. 1c. State the importance and elements of ornamentation. 1d. Enlist traditional textile painting techniques.	1.1 History of fabric or garment ornamentation 1.1.1 Role of “Pattern books” in garment ornamentation in Europe 1.1.2 Importance of garment ornamentation 1.1.3 Elements of ornamentation 1.2 Traditional Textile Painting Techniques 1.2.1 History, introduction, uses, motifs and material used and methods of construction of following- Madhubani painting of Bihar, Warli painting of Maharashtra, Kalighat painting of West Bengal, Gond painting by tribal in India, Phad painting of Rajasthan, Patachitra painting of Orissa, Tanjore painting of South India and Kerala Mural painting
UNIT 2 Traditional Ornamentation Techniques (10hrs,12 marks)	
2a. Memories history and origin of various regional embroidery techniques. 2b. Explain the role of uses, motifs and material used in various regional embroidery techniques. 2c. State the methods of construction of various regional embroidery techniques. 2d. Compare between various regional embroidery techniques.	2.1 Traditional regional embroidery techniques used in ancient India- History, introduction, uses, motifs, material used and methods of construction of following- 2.1.1 Northern India- Kashida of Kashmir, Phulkari of Punjab, Chamba Rumal of Himachal Pradesh 2.1.2 Western India- Kutch and Kathiawar Embroideries of Gujrat, Parsi Embroideries of Mumbai 2.1.3 Central India- Chikankari of Uttar Pradesh 2.1.4 Southern India- Kasuti of Karnataka, Lambadi Embroideries of Andhra Pradesh 2.1.5 Eastern India- Kantha of Bengal, Sujani of Bihar
UNIT 3 Crust Embellishment Techniques (12hrs,16 marks)	
3a. State the History, origin, usage, motif and material used for Patch Work, Applique and Quilting. 3b. Explain the method of construction of Patchwork, Applique and Quilting. 3c. Enlist types and techniques	3.1 Patch work - History, introduction, uses, motifs and material used and methods of construction and structural types of patchwork – The block, Overall and Strip piecing. 3.2 Applique- History, introduction, uses, motifs and material used and methods of construction- (By Hand and Machine, Reverse Applique), Traditional types of applique- Phulpatti work of Aligarh, Gota work of Jaipur,

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
<p>of Patchwork, Applique and Quilting.</p> <p>3d. Comparison between Patchwork, Applique and Quilting.</p>	<p>Pipli work of Orrisa, Khatwa work of Bihar, Katab work of Gujrat</p> <p>3.3 Quilting- History, introduction, uses, motifs and material used, methods of construction and Types of quilting- (Tying, Padded and Corded), Quilts around the world- Asian (Lambadi/ Laman/ Banjara) and Europe, UK, US (Whole cloth quilts, Broderie perse quilts, Medallion quilts and Amish quilts)</p>
Section-II	
UNIT 4 Arte fact Embroidery Techniques (10hrs,12 marks)	
<p>4a. State the material used and method of construction of Sequin work, Gold/ silver work, Bead work, Aari work, Jardozi work, Sheesha work, and Cutwork.</p> <p>4b. Explain the role of artefact embroideries techniques used.</p> <p>4c. Enlist various Fabric Manipulation techniques.</p> <p>4d. State the methods of construction of Smocking.</p>	<p>4.1 Various embroidery techniques- Origin, uses, material used and methods of construction of the following- Sequin work, Gold and silver wires work, Bead work, Hand Aari work, Jardozi work, Sheesha work and Cut work</p> <p>4.2 Fabric Manipulation- Origin, uses, material used and methods of construction- Subtraction technique, Construction technique, Shibori and Smocking- Cable stitch, Stem stitch, Outline stitch, Cable flowerette, Wave stitch, Honeycomb stitch, Surface honeycomb stitch, Trellis stitch, Vandyke stitch, Bullion stitch and Smocker's knot</p>
UNIT 5 Yarn Crafting Techniques (10hrs,12 marks)	
<p>5a. State the usage and material used for laces, braids, crochet and knots of Macramé.</p> <p>5b. Explain construction techniques used for Crochet and Macrame.</p> <p>5c. Describe importance of yarn crafting techniques.</p> <p>5d. Describe role of fringes and tassels used in garments.</p>	<p>5.1 Lace work- Origin, uses, material used, structure, methods of construction and Types of laces- Bobbin lace, Needle lace and Schiffli lace/ Chemical lace and Contemporary laces</p> <p>5.2 Braiding- Origin and history, uses, material used, methods of construction and types of braids – Flat braid, Round / circular braid and 3D braids</p> <p>5.3 Crocheting- Origin and history, uses, material used, types and methods of construction</p> <p>5.4 Macramé- Origin and history, uses, material used, types and methods of construction</p> <p>5.5 Fringes and Tassels- Origin and history, uses, material used, methods of construction</p>
UNIT 6 Traditional Textile's Dying and Printing Techniques (12hrs,16 marks)	
<p>6a. State the history and origin of traditional textile.</p> <p>6b. Describe the motifs, colors and dyes used for construction of Tie- Dye, Batik and Block</p>	<p>6.1 Tie and Dye- History and introduction, uses, designs, material and methods Used- Bandhani of Gujrat (Gharcholu, Chandokhani etc.), Bandhej or Laheriya of Rajashtan (Piliya/Pilada, Mothra etc.)</p> <p>6.2 Batik - History and introduction, uses, designs, material</p>

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Printed Textiles 6c. Explain the method of construction of Tie- Dye, Batik and Block Printed Textiles 6d. Enlist the usage and importance of Tie- Dye, Batik and Block Printed Textiles	used and methods of construction 6.3 Block printed textiles- History, Introduction, uses, motifs and material used and methods of construction of following- Bagh print, Ajrak print, Dabu print, Gold and Silver Dust print, Sangneri print and Bagru print

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
I	Introduction to Garment Ornamentation	10	04	04	04	12
II	Traditional Ornamentation Techniques	10	03	04	05	12
III	Crust Embellishment Techniques	12	06	02	08	16
Section II						
IV	Arte fact Embroidery Techniques	10	04	04	04	12
V	Yarn Crafting Techniques	10	03	04	05	12
VI	Traditional Textile's Dying and Printing Techniques	12	06	02	08	16
Total		64	26	20	34	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews

- Arrange window displays of various embroideries & painted textiles of India.
- Collect the photographs & information of embroideries & Painted textile of India.
- Visit to various boutique or retail shops to know application of embroideries and painted textile of India.
- Visit to art exhibition to study of embroideries & painted textile of India.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- b. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Teacher should plan field visits, market surveys etc.
- j. Arrange expert lectures and workshop to demonstrate the various techniques of surface ornamentation.

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty

- a. Information collection of current manufacturing processes used for Traditional Painted Textiles of India.
- b. Collection of photos or develop a library of Traditional Painted Textiles of India.
- c. Information collection of current manufacturing processes used for Traditional Embroideries of India.
- d. Collection of photos or develop a library of Traditional Embroideries of India.
- e. Conduct a market survey or e-visit and compile a report on “Applique making techniques used in various countries”.
- f. Conduct a market survey and compile a swatch library of various types of laces.
- g. Make an analysis to understand use of Braid, Macramé and Crocheting in other fields other than garments, jewelries and accessories.
- h. Make an analysis to understand a Costing and Pricing Strategies of Tie and Dye.
- i. Conduct a market survey or e-visit and compile a report on “Batik making techniques used in various countries for eg. Indonesia”.
- j. Write report on, “Wood block printing invention from ancient China, Japan to current techniques used”.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Complete Guide to Needle Work	Readers Digest	ISBN:978
2	Mc-Calls Needle Work Treasury learn & Make book	Mc-Calls, Random House	ISBN:978-0394410173
3	Needle Work & Sewing Technique (The Complete Encyclopaedia)	Amanda O' Neil, London Crange Books	ISBN:978-1853481413
4	Patchwork, quilting & Applique	Georges A.S	ISBN:9780004133003
5	Quilted Project & Garment	Singer	ISBN:978-0865733008
6	Stitch by Stitch	Marshall Cavendish, N.Y. Torstar, Books	ASIN:B0019MZENG
7	Designs Crochet	Dittrick Mark, N.York Hawthon	ISBN:9780801520198
8	Batik design	Roojen,	ISBN:978-1570623288
9	Patchwork & Applique	Martini Nel, V.A Laurie	ISBN:978-0864173515
10	Easy to make Applique Quilts for Children	Corwin Judith Hopmqn,	ISBN:9780486242934
11	Complete Guide to Crochet	Dawason Pam, London Marshall	ISBN:978-0856851902
12	Technology of Dying	V.A.Shenai	ASIN:B0007ASYXS
13	History of fashion	Gorsline Douglas, Worth London	ISBN:978-0712465921





13. SOFTWARE/LEARNING WEBSITES-

1. http://164.100.133.129:81/econtent/Uploads/SURFACE_ORNAMENTATION.pdf
2. http://www.cbseacademic.nic.in/web_material/Curriculum/Vocational/2015/Traditional_India_Textile_and_Basic_Pattern_Dev_XII
3. http://content.inflibnet.ac.in/data-server/eacharyadocuments/56b0853a8ae36ca7bfe81449_INFIEP_79/13/ET/79-13-ET-V1-S1_unit_1.pdf

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	1	-	1	-	-	1
CO2	3	1	-	-	1	-	1
CO3	3	-	-	1	1	-	1
CO4	3	-	-	1	1	-	1
CO5	3	1	1	1	1	-	1

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	2	2
CO5	3	3

Sign:  Name: Mrs. S.N. Shinde (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Draping Techniques
Course Code	DD4109
Prerequisite course code and name	NA
Class Declaration	No

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				Total Marks	
					Theory		Practical			
L	T	P	C		ESE	PA	*ESE	PA		
					Marks	40	10	50	50	150
03	00	06	09		Exam Duration	2 Hrs	1/2Hr	--	--	--

(*): PE (Practical Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

In today's world Draping techniques evolves in fashion industry a way to create new patterns. Draping is a quick and easy method to transform the style into outfit. This course is designed to give fundamental knowledge of draping techniques. After studying this course students will develop ability to drape and create patterns.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- Develop variety of dress and garment using advance draping method.

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Interpret the fundamentals of draping.
2. Summarize History of Draping.
3. Apply changing aspects of Draping.
4. Develop creative patterns.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Understanding terminology of draping. Dress form tool and its terms, size chart, truing, muslin marking, grain, pinning.	1	04
2.		Marking of pleats and gathers. Basic steps, & truing for Pleats, Tucks & gathers Notching practices.	1	06
3.		Draping of Bodice Blocks & darts. Front Bodice with under arm Dart, Back Bodice with Neckline Dart. Dart manipulation-Waist line Dart ,Dart at waistline and centre front, French Dart – Double French Dart.	1	12
4.		Draping of Flanges & Neckline. Flange Dart - Neckline Dart, Neckline variations – Front & Back Armhole variations, Typical sleeveless – Squared – Cutaway	1	06
5.	2.	Draping Of Bodice Blocks & cowls Waist line variation- lowered, Empire-Shortened -Scalloped - Pointed. The Princes Bodice, Cowls -front– Under arm cowl -Wrapped neckline cowl. Twists-Butterfly Twist, Neck yoke twist, Bust twist.	1,3	10
6.		Draping Of Skirts. Draping of one piece basic skirt , Gored skirt, Flared skirt ,Pleats in the flared skirt ,Gathers in the flared skirt ,Pleated skirt ,Side & Box pleated skirt, Kick pleated and inverted pleated skirt.	1,3	14
7.		Draping Of Knit Garments Draping of basic straight slacks-Fitted slacks, Tapered slacks. Halter, Bustier Designs. Flounces – Circular flounce, Shirred Flounce, Ruffles, Variable Ruffle finishes peplums.	1	08
8.	3.	Draping of basic Bodice with taffeta or stiff materials. Bustier and Halter top	3	04
9.		Draping of skirt with chiffon or synthetic materials. Gathered and pleated Skirt.	3	04
10.		Identifying design details. Development of design shown in picture through draping.	2	04

11.	4.	Drape a sarong & Toga	2	04
12.		Draping a cloaks & tunic Pattern with synthetic material.		04
13.		Creative Draping. Theme based pattern.	4	12
		Stitching of draped pattern. one evening gown of the above		
15.	All	Complete a micro project based on guidelines provided in Sr. No 11	1 to 4	04
Total				96

Sr.No.	Performance Indicators	Weightage in %
a.	Neatness	20
b.	Fit & truing	20
c.	Seam allowances & grain lines	10
d.	Concept interpretation	40
e.	Submission of report in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	L Square, Dress form, Straight Pins, silk pins, French Curve, Muslin, Notcher, Pencils, Pin Cushion, Scissors and Shears, Chalk, Tape Measure, Tracing Wheel, Yardstick, Tracing wheel, Brown paper	1,2,3,4,5,6,7,8,9,10,11,12, 13,14,15
2	Fashion fabric ,knit fabric, taffeta, Lace	7,8
3	sewing machine	14

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
UNIT 1. BASICS OF DRAPING (18hrs,14 marks)	
1a. Define draping terminology 1b. List principles of Draping and balanced pattern 1c. Describe seam allowance, moods of fabrics, selection of fabric.	1.1 Draping Terminology Apex, Arm hole, Bodice, Blocking, Bust line, Centre Front, Centre Back, Crease, Grain line, Notches, Waist line, Seam, Neck line, Shoulder, Grain line on fold, Pleat (arrows indicates direction of fold) – Truing, Two way grain line, One way grain line 1.2 Principles of Draping 1.3 Advantages & disadvantages of Draping 1.4 Fabric Construction –Woven and Knit fabric 1.5 Grain lines and soft grains- Length wise, Cross wise grain, Bias grain 1.7 Principles of balanced pattern 1.8 Seam allowance 1.9 Moods of fabric 1.10 Selection of Fabrics
UNIT 2 HISTORY OF DRAPING (14 hrs,12 marks)	
2a. Explain history of fashion draping 2b. Define ancient draped garments. 2c. Describe costumes used in ancient period of Egypt, Rome, Greece.	2.1 History of Fashion Draping History of Mesopotamian & Egyptian Dressings. 2.2 Chitons, Stola, Toga, Cloaks, kilt, Sarong, Peplos 2.3 5 Draperies in Egypt during ancient time. 2.4 5 Draperies in Greece during ancient time. 2.5 Draperies in Rome during ancient time.
UNIT 3 DYNAMICS OF DRAPING (16hrs,14 marks)	
3a. Explain classification of drapes 3b. Describe weight and drape, Draping and moulage 3c. Explain Fabric properties and drape. 3d. Describe clothes up cycle and zero waste management in draping.	3.1 Classification of Drapes Fluid, moderate, Full body drape 3.2 weight and drape 3.3 Draping and moulage 3.4 Fabric properties and drapes- knit, woven-, muslin, taffeta, chiffon. 3.5 Clothes Up cycle and draping 3.6 Draping a zero waste designing technique

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Basics of Draping	18	04	06	04	14
II	History of Draping	14	04	08	00	12
III	Dynamics of Draping	16	00	08	06	14
Total		48	08	22	10	40

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- Prepare a portfolio of draped costume.
- Conduct a Photo shoots for draped and stitched garment.
- Arrange an in house fashion show/display/competition for draping.
- Collect information of designers famous for draping.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- Guide student(s) in undertaking micro-projects.
- Correlate subtopics with automation.
- Use proper equivalent analogy to explain different concepts.
- Use Flash/Animations to explain various components, operation and its application.
- Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of

individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Conduct a market survey and collection of textile samples suitable for draping.
- b. prepare a swatch board of fabrics suitable for draping.
- c. Prepare a display board for ancient draping techniques used around the world in epic era.
- d. Drape a creative garment to barbie.(minimum1)
- e. Prepare a report on national and international designers work for draping.
- f. Prepare a sketch board or illustration board for draped costumes.(minimum 3 illustrations)
- g. Drape with ecofriendly or sustainable textile material like banana fabric, bamboo fabric etc.
- h. Prepare a comparative in tabular form for drapability of woven, knit and fluid or synthetic and natural fiber.
- i. Drape with recycled material like old dress, fabric. laces and threads.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	The Art of Fashion Draping 4th Edition	Author –Connie Amaden Publisher -Fairchild Books	ISBN-13: 978-1609012274 ISBN-10: 1609012275
2	Draping - Art and Craftsmanship in Fashion Design	Author -Annette Duburg E. Publisher -Artez Press	ISBN- 9789491444210
3	Fashion Moulage Technique: A Step by Step Draping Course 1st Edition	Author –Danlio Attardi Publisher -Paperback	ISBN-13: 978-8417412128 ISBN-10: 8417412123
4	Draping: The Complete Course: Second Edition	Author –Karolyn Kiisel Publisher: Laurence King	ISBN-10: 1786272318 ISBN-13: 978-1786272317
5	The Art of Fashion Draping	Author –Connie Amaden Publisher :Fairchild publication Paperback	ISBN- 9781501330292
6	Draping for Apparel Design	Armstrong-Helen Joseph-	ISBN-10: 1609012402 ISBN-13: 978-1609012403

13. SOFTWARE/LEARNING WEBSITES

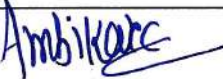

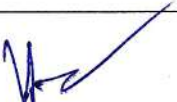

1. https://en.wikipedia.org/wiki/Draped_garment
2. <https://www.universityoffashion.com/blog/what-is-draping-an-overview-and-history/>
3. <https://fitnyc.libguides.com/fashiondesign/draping>
4. <https://www.fabric.com/blog/fabric-101-drape/>
5. <https://blog.colettehq.com/inspiration/choosing-fabric-weight-vs-drape>
6. <https://www.slideshare.net/Lavanyaappu/draping>
7. <https://www.slideshare.net/HiuNguynBnhPhng/draping-140701002255phpapp02-48784295>
8. http://www.ijera.com/papers/Vol3_issue5/FS3510121016.pdf
9. <https://www.thecuttingclass.com/draping-and-moulage/>

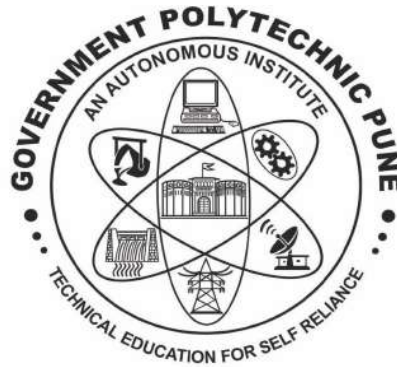
10. http://www.texmedin.eu/uplfile/62_Following%20the%20Classical%20Greek%20Drape%20through%20the%20Ages2.pdf
 11. https://www.researchgate.net/publication/283192454_Fabric_draping_and_cotton_fabric_structure_relation_analysis
 12. https://www.ijera.com/papers/Vol3_issue5/FR3510071011.pdf
 13. http://www.modopactua.com/pdf/LEARN_Zero-waste_ENG.pdf
 14. <https://world4.eu/ancient-egyptian-costumes/>
 15. <https://www.jdinstitute.edu.in/draping-why-is-it-important-for-every-fashion-student/>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	-	1	-	-	-	2
CO2	-	-	2	-	2	-	2
CO3	2	1	1	-	-	-	1
CO4	-	1	2	3	-	-	2

	PSO 1	PSO 2
CO1	3	-
CO2	-	2
CO3	1	-
CO4	2	2

Sign:  Name: Mrs. C.M. Ambikar (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A. S. Zanpure (CDC)



Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing

LEVEL-5 (Diversified Courses)

Sr. No.	Course Code	Course Name
1	DD-5101	Retail Merchandising
2	DD-5102	Fashion Forecasting
3	DD-5103	Fashion Communication
4	DD-5104	Technology of Knit
5	DD-5105	Quality Standards in Apparel Manufacturing
6	DD-5106	Apparel Management

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/08/16/17/21/22/23/24/26
Name of Course	Retail Merchandising
Course Code	DD 5101
Prerequisite course code and name	Fashion Merchandising (DD 3106) and Level 1 completed
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C	ESE	PA	\$ ESE	PA		
04	00	02	06	Marks	80	20	25	25	150
				Exam Duration	03Hrs	01Hrs	--	--	

(\$): OE (Oral Examination -External)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of various terminologies used in fashion retail management also retail merchandise management processes, fashion brands, policies, innovative methodologies and professional opportunities to increase sales.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Execute retail merchandising and marketing techniques for selling fashion goods /products.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Determine the process and strategies for retailing.
2. Evaluate the use of consumer services and policies used in retailing.
3. Analyze the role of buyer and fundamentals of effective buying.
4. Interpret the need of inventory planning, control and Market Segmentation.
5. Implement the functions of Visual Merchandising and direct marketing.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	Make a chart of -Structure of retailing For Organized and Unorganized retailing	1	04
		Make a chart of - Types of Retailing <ul style="list-style-type: none"> Based on Merchandise offered Based on Types of Ownerships 	1	
2	2	Prepare a case study on “Retail merchandising process” of any one store by considering following points <ul style="list-style-type: none"> Type of retail business, Functions, roles and responsibilities of Retail Merchandiser and buyer, Merchandising policies, Distribution channels, Consumer services offered Ethical and Legal Considerations 	1,2	04
3	3	Develop a proposal for “Starting any retail store” by considering following points <ul style="list-style-type: none"> Introduction of Retail Process Retail buying- Functions of Buyer, Buying Office and Buying Agency, Buying in Domestic/ International market (Facilities and Challenges) Fashion Sourcing Range Planning for fashion buying Costing And Pricing Strategies Targeting Consumer 	1,2,3	04
4	4	Prepare a Assignment on “Retail Merchandising Inventory Planning Processes” of any one store by considering following points <ul style="list-style-type: none"> Type of retail business, Types of management –Category/ Assortment Option Plan, Merchandising Calendar, Display Calendar used OTB Plan Policies used Replenishment systems used Six months Merchandising Plan/ ABC analysis used Stock to sales ratio followed 	1,2,3,4	04
5	5	Arranging a Window displays based on “Various Retail Outlets” <ul style="list-style-type: none"> Make group of 5-6 students and perform Window display considering elements of VM 	1,2,3,4,5	08
6	6	Make a Presentation on “Previous, Current and future trends in Fashion Retailing”. <ul style="list-style-type: none"> Make group of 5-6 students and describe the Retail Buying and selling processes. 	1,2,3,4,5	04

7	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	4
Total				32

Sr.No.	Performance Indicators	Weightage in %
a.	Concept interpretation & data collection	40
b.	Presentation (Data/Chart/Image/ppt)	40
c.	Submission of report in time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Computer or Internet	1 to 7
2	Fashion Magazines or Books	
3	Various stackers for window display.	
4	Lights to focus required for window display.	
5	Props according to store type required for window display	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section-I	
Unit 1: Retailing Scenario (10hrs,12marks)	
1a. Define the term Retailing and fashion retailing 1b. State the role and responsibilities of a retailer. 1c. State the structure of retailing 1d. Explain the importance of site selection, store layout and design 1e. Describe the various carrier opportunities in retail business.	1.1 Introduction to Retailing 1.2 Socially Responsible retailers- Retail sales, employability 1.3 Structure of retailing Organized and Unorganized 1.4 Study of 4 Ps – product, price, place, promotion 1.5 Trends in retailing- Demand, number of shops, polarization, merger and acquisitions, E-tailing 1.6 Types of Retailing 1.6.1 Types of Ownerships 1.7 Various Retail outlets 1.8 Store Planning and Layout 1.9 Carrier and Entrepreneurial Opportunities in retailing
UNIT 2. Retail Merchandise Management (10hrs,12marks)	
2a. Define the process of Retail Merchandising 2b. State the Functions of Retail Merchandiser 2c. Enlist Various Merchandising Policies 2d. Explain the process of	2.1 Principles of Fashion Merchandising 2.2 Merchandise Management Decision Process 2.3 Functions of Retail Merchandiser 2.4 Developing fashion image (7 Merchandising Policies) 2.5 Retail Merchandiser Vs. Fashion Merchandiser 2.6 Merchandising Policies 2.7 Distribution Channels

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Selling to Retail Stores 2e. Describe the various Ethical and Legal considerations in Retailing.	2.7.1 Channel activities in Retail Merchandising 2.8 Selling to Retail Stores 2.9 Ethical and Legal Considerations
UNIT 3. Retail Buying (12hrs,16marks)	
3a. Define the terminologies- Retail Buyer, Buyer Office 3b. Enlist the steps of Retail Buying Process 3c. State the Functions, role and responsibilities of Retail Buyers 3d. Differentiate between Domestic Vs. International Buying offices 3e. Enlist Additional Buyers Responsibilities	3.1 Introduction of Retail Buying Process 3.2 Importance of Retail Buying 3.3 Functions of Retail Buyers 3.4 Buyers Offices and its functions 3.4.1 Selection of Buyer 3.4.2 Fashion Sourcing 3.4.3 Buying in Domestic and International 3.4.4 Range Planning for fashion buying 3.5 Costing And Pricing Strategies 3.6 Fundamentals of effective Buying 3.7 Additional Buyers Responsibilities
Section-II	
UNIT 4. Inventory Planning of Retail Fashion Merchandising (12hrs,16marks)	
4a. Enlist various Merchandising Planning Processes 4b. Describe with an example Category and Assortment management 4c. State the importance of Replenishment system 4d. Describe Brand Policies 4e. Compare between National, International and Private brands	4.1 Merchandising Planning Processes 4.1.1 Category management v/s Assortment management 4.1.2 Option Plan 4.1.3 Merchandising Calendar 4.1.4 Replenishment systems – Manual and Automatic replenishment 4.1.5 Six months Merchandising Plan 4.1.6 ABC analysis 4.1.7 Stock to sales ratio 4.1.8 OTB Plan (Open to Buy) 4.2 Key Performance Indicators 4.3 Introduction to National, International and Private brands 4.4 Brands Policies
UNIT 5. Retail Marketing and Visual Merchandising (10hrs,12marks)	
5a. Define the term Retail Marketing 5b. State the importance of Marketing Mix 5c. Enlist Fashion Supporting Agencies 5d. Explain the cause of arranging Special Events. 5e. Describe importance of VM	5.1 Size and structure of fashion market – micro and macro 5.2 Retail Marketing Process 5.3 Marketing Mix and Product Mix 5.4 Marketing & Selling 5.5 Fashion Supporting Agencies 5.6 Special Events 5.7 Visual Merchandising
UNIT 6. Direct Marketing (10hrs,12marks)	
6a. Define the term “Direct Marketing” 6b. Enlist and explain-On-line	6.1 Introduction and importance of Direct Marketing 6.2 Various On-line marketing channel 6.3 The Marketing Actors

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
marketing channel 6c. Describe- The Marketing Actors 6d. Explain Strategic Marketing	6.3.1 Customers 6.3.2 Marketing Facilitators 6.3.3 The Salesman 6.4 Strategic Marketing 6.4.1 Marketing Mix Planning 6.4.2 Marketing segments

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section-I						
I	Retailing Scenario	10	04	04	04	12
II	Retail Merchandise Management	10	03	04	05	12
III	Retail Buying	12	06	02	08	16
Section-II						
IV	Planning of Retail Fashion Merchandising	12	06	02	08	16
V	Retail Marketing and Visual Merchandising	10	04	04	04	12
VI	Direct Marketing	10	03	04	05	12
Total		64	26	20	34	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record **physical evidences for their** (student's) portfolio which will be useful for their placement interviews:

- A field visit to learn fundamentals of retailing.
- Collect information of the "Services provided by any retail fashion store for increasing the sell and to attract the customers".
- Make a PPT presentation on "Need of E-tailing". Prepare a booklet or folder of pictures of store layouts of different brands.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the

development of the COs through classroom presentations (see implementation guideline for details).

- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Teacher should plan field visits, market surveys etc.
- j. Arrange expert lectures and workshop to demonstrate the various techniques of surface ornamentation.
- k. Teacher should plan field visits, market surveys etc.

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes). Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Information collection of Organized or Unorganized retail sectors of fashion business.
- b. Collection of photos (6 minimum) for understanding the role of Marketing Actors.
- c. Conduct a market survey or e-visit and compile a report on “Segmentation of market”.
- d. Make an analysis to observe consumer buying behavior for any one fashion product (same category).
- e. Prepare a technical specifications sheet of Costing and Pricing Strategies used in retailing.
- f. Prepare display board of any one National, International and Private brands.
- g. Prepare a Merchandising Calendar for any one products
- h. Attend any virtual Special Event and prepare a report on the same.
- i. Prepare prototype working model of Retail Marketing process.
- j. Identify and write report on brand Policies of any one National/ International brands.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Merchandise Buying & Management	John Donnellan, Fairchild Publications, New York	ISBN:1609014901, ISBN:9781609014902
2	Fashion Retailing	Ellen Diamond (Second edition), Pearson Education inc. New Delhi	
3	Retailing: An introduction	Roger Cox, Pearson Education inc. New Delhi	ISBN:9788131704714

4	Retail Management	Levyeweit 6th edition	ISBN:139781259004742
5	Fashion from concepts to consumers	Gini Stephens Fringes, Prentise Hall Inc. New Delhi	ISBN:9780131173385
6	Fashion Marketing	Mike Easey, Wiley – Blackwell Publication	ISBN:9781405139533
7	Visual Merchandising	Tony Morgan Publisher-Laurence King-2011	ISBN:9781856697637


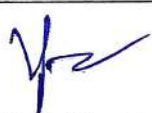


13. SOFTWARE/LEARNING WEBSITES-

1. <https://www.bloomsbury.com/us/fashion-retailing-9782940496235/>
2. <https://www.britannica.com/art/fashion-industry/Fashion-retailing-marketing-and-merchandising>
3. <https://www.bookdepository.com/Fashion-Retailing-Dimitri-Koumbis/9782940496235>

14. PO/PSO - COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	-	1	1	-	2	2	2
CO2	-	1	1	-	2	2	2
CO3	-	1	1	-	2	1	2
CO4	1	2	1	-	2	2	3
CO5	1	1	1	-	2	1	3

	PSO1	PSO2
CO1	-	-
CO2	1	2
CO3	-	1
CO4	-	1
CO5	1	2

Sign:  Name: Mrs. S. N. Shinde (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanjure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fashion Forecasting
Course Code	DD5102
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
L	T	P			Theory		Practical		Total Marks
			C		ESE	PA	SESE	PA	
				Marks	80	20	25	25	150
04	00	02	06	Exam Duration	3 Hrs	1 Hr	--	--	

(\$): *OE (Oral Examination-External)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge for forecasting trend, fashion & color. Taking in to account color evolution, social as well as economic trends, consumer preferences and other influencing factors use for prediction.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Acquainted with the terms & techniques of forecasting for trends, fashion & colors.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency

1. Determine the concept of fashion forecasting & basics of trend predictions.
2. Analyze theories of fashion forecasting.
3. Evaluate the trends, innovation in fashion forecasting framework.
4. Identify the role of forecasting in textile and apparel industry.
5. Interpret the relationships between consumer research and product development.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	Make a chart for forecasting process. Forecasting process with consideration of internal, external, structured and unstructured factors .	1	04
2	2	Presentation on “Trend Analysis, Fashion Show Analysis” or Micro, Macro trends and Common Trends”.	1,4	06
3	3	Presentation on “Fashion Reading and formulation of new trends”.	2,5	08
	3	Assignment on development of “color palette, boards etc. for new season.”	2	
4	4	Develop a design for future fashion by using recycling in accessories or apparels. (Any One)	3,5	06
5	5	Make a chart of consumer buying preferences. Categorize factors affecting consumer buying behavior.	4	04
6	All	Complete a micro project based on guidelines provided in Sr. No 11.	1 to 5	04
Total			--	32

Sr.No.	Performance Indicators	Weightage in %
a.	Concept interpretation & data collection	40
b.	Presentation (Data/Chart/Image/ppt)	40
d.	Submission of report in time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Computer or Internet	1,2,3,4,5
2	Fashion Magazines or Books and fashion journals or periodicals	1,2,3,4,5

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
SECTION-I	
Unit 1: Fashion Forecasting Process (08hrs,14marks)	
<p>1a. Define forecasting.</p> <p>1b. Enlist steps in developing forecast.</p> <p>1c. Describe Consumer Scan & Fashion Scan.</p> <p>1d. Explain fashion analysis.</p> <p>1e. Determine Social and economic factors create trends in forecasting.</p> <p>1f. Summarize trend Analysis.</p> <p>1g. Describe Competitive Analysis.</p> <p>1h. Explain role of Zeitgeist.</p> <p>1i. Differentiate between Short term forecasting Long term forecasting</p>	<p>1.1 Definition of forecasting.</p> <p>1.2 Principles of forecasting</p> <p>1.3 Advantage and disadvantage of forecasting</p> <p>1.4. Visualization and Forecasting</p> <p>1.4.1 Steps in developing forecast</p> <p>1.5 Fashion Scan</p> <p>1.6 Consumer Scan</p> <p>1.7 Fashion Analysis</p> <p>1.8 Social and economic trends</p> <p>1.9 Trend Analysis</p> <p>1.10 Competitive Analysis</p> <p>1.11 Discovering the Zeitgeist</p> <p>1.11 Techniques of forecasting</p> <p>1.11.1 Short term forecasting</p> <p>1.11.2 Long term forecasting</p>
Unit 2: The Basics Of Trend Prediction (12hrs,12marks)	
<p>2a. Define Trend.</p> <p>2b. State basics of trend analysis.</p> <p>2c. Describe Fashion Trend Prediction</p> <p>2d. State the Color Segmentation</p> <p>2e. Describe fashion and competitive analysis.</p> <p>2f. Differentiate between Qualitative forecasting & Quantitative Forecasting</p> <p>2g. Write about impact of Social movement on forecasting.</p> <p>2h. Write about impact of Social movement on forecasting.</p> <p>2i. Explain the dependency of apparel manufacturers on forecasting.</p>	<p>2.1 Definition of Trend</p> <p>2.1.2 Trend analysis</p> <p>2.1.3 Fashion Trend Prediction</p> <p>2.1.4 Color Segmentation</p> <p>2.1.5 Fashion Analysis</p> <p>2.1.6 Competitive Analysis</p> <p>2.3 Types of forecasting</p> <p>2.3.1 Qualitative forecasting</p> <p>2.3.2 Quantitative Forecasting</p> <p>2.4 Key Event (Social Movement)</p> <p>2.5 Social Custom(Target Market)</p> <p>2.6. Forecasting and apparel manufacturers</p> <p>2.6.1 Color Planning</p> <p>2.6.2 Production planning and forecast</p>
Unit 3: Forecasting Cycle (10hrs,14 marks)	
<p>3a. Describe movement of fashion</p> <p>3b. Differentiate between trickle Down theory & trickle up theory.</p> <p>3c. Classify fashion curve and pendulum swing.</p> <p>3d. State the importance of fashion recycling.</p> <p>3e. Explain impact of technology on forecasting.</p> <p>3f. Describe elements & process of forecasting.</p>	<p>3.1 Fashion Curve</p> <p>3.2 Pendulum Swing</p> <p>3.2.1 Pendulum of fashion</p> <p>3.2.2 Recycling fashion Ideas</p> <p>3.2.3 Technology and forecasting</p> <p>3.4 Forecasting Process</p> <p>3.4.1. Color</p> <p>3.4.2 Fabric</p>

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	3.4.3 Inspiration 3.5 Role of Technology in Forecasting 3.5.1 Role of digital media
Section-II Unit 4: Forecasting Framework (10hrs,12 marks)	
4a. Identify diffusion of innovation as framework. 4b. State the distinguish characteristics of innovation and customer adaptation process 4c. Evaluate importance of analyzing current fashion, in forecasting. 4d. Classify innovators, leaders & followers. 4e. Describe the responsibility and role of fashion forecaster. 4f. State Diffusion Of Innovation in forecasting. 4g. Define trends in fashion. 4h. Describe Evolution of a trends in market. 4i. Enlist the importance of Trend analysis and synthesis. 4j. State the consumer segmentation according to behavior and product types.	4.1 Introducing Innovation 4.1.1 Characteristic of innovation 4.1.2 Consumer adaptation process 4.2 Fashion Change Agents 4.2.1 Innovators 4.3 The role of fashion forecaster. Diffusion Of Innovation 4.5.1 Visualizing the Diffusion Process 4.6 Fashion Trends 4.7 Evolution of a trend 4.7.1 Trend analysis and synthesis 4.8 Consumer Segmentation
Unit 5: Fashion Dynamics (12hrs,14 marks)	
5a. Explain the role of colors in forecasting. 5b. Describe types of forecasting agencies and its role in apparel industry. 5c. State the impact of colors on consumer buying. 5d. Describe color forecasting as a coordinating factor in the apparel supply. 5e. Explain the correlation of textile development & apparel industry. 5f. Describe types of textile innovations.	5.1. Color Forecasting - The color story 5.1.1 Organization for professional color forecaster. 5.1.2 Color Association of the United States (CAUS) 5.1.3 Color Marketing Group (CMG) 5.2 Consumers and color 5.2. Color Symbols 5.3 Color and Segmentation 5.4. Color Research 5.5. Textile Development 5.5.1. Yarn forecast and fiber forecast 5.5.2. Sources of innovation in textile development. 5.5.3. Leading edge of innovation 5.5.4. Green edge of innovation 5.5.5. Timing of Innovation

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit 6: Market Place Dynamic (12hrs,14 marks)	
6a.Explain the relationships between consumer research and product development. 6b.Describe the importance of consumer satisfaction link to future sales. 6c.Identify types of factors affects sales forecasting. 6d.State the stages of product life cycle. 6e.State the role of sales forecasting in linking with demand and supply. 6f.Explain impact of social media on trends so on sales.	6.1 Consumer Research 6.1.1 Business begins and ends with consumers. 6.1.2 Listening to the voice of the consumer 6.1.3 Focus group research 6.1.4 Consumer Behavior 6.2 Sales Forecasting 6.2.1 Sales forecasting basics. 6.2.2 Advantages of sales forecasting 6.2.3 Methods of sales forecasting 6.2.4 The product life cycle. 6.3 Trend Multiplication. 6.4 Social Media and Trends 6.5 Economic order quantity (EOQ)

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
I	Fashion Forecasting Process	08	06	04	04	14
II	The Basics Of Trend Prediction	12	04	04	04	12
III	Forecasting Cycle	10	06	04	04	14
Section II						
IV	Forecasting Framework	10	02	06	04	12
V	Fashion Dynamics	12	04	04	06	14
VI	Market Place Dynamic	12	02	06	06	14
		64	24	28	28	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews

- Data collection of 2 famous fashion forecaster.
- Collect information of trend predictions in apparel or textile company.
- Make a Presentation on "consumer & markdown or discounts in market".

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- b. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- c. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for **self-directed learning** and assess the development of the COs through classroom presentations (see implementation guideline for details).
- d. With respect to item No.9, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
- e. Guide student(s) in undertaking micro-projects.
- f. Correlate subtopics with power plant system and equipment's.
- g. Use proper equivalent analogy to explain different concepts.
- h. Use Flash/Animations to explain various components, operation and its application.
- i. Teacher should ask the students to go through instruction and Technical manuals

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs.(Affective Domain Outcomes). Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty

- a. Collection of color forecasting cards of different forecasting agencies.
- b. Collection of pictures (6 minimum)for characteristic look (from 5 to 30 years ago) and co-relate theories of fashion.
- c. Conduct market survey or e-visit to textile store and collect information about recent trends in textile.
- d. Make a video to with consumer to understand buying preferences in mall or boutique.
- e. Prepare a Report on significance of fashion forecasting in apparel Industry.
- f. Prepare a report on Power of Colors.
- g. Prepare a display board on trend forecasting in women's fashion.
- h. Prepare a report on working of forecasting agencies.
- i. Prepare a report on use of artificial intelligence in fashion and trend forecasting.
- j. Prepare a report on actual impact of forecasting on production and sales.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Forecasting	Author - Eyelyn L.Brannon, Publisher-Fairchild Books	ISBN:9781563678202

2	Fashion Forecasting	Author - Eyelyn L.Brannon, & Lorynn R.Divita Publisher- Bloomsbury Academic USA	ISBN:10: 1628925469 ISBN:13:9781628925463
3	The Fundamentals Of Fashion Management	Author -By Susan Dillon Publisher- Fairchild Books	ISBN:9781474271219
4	Fashion Forward	Author - Chelsea Rousso and Nancy Kaplan Ostroff Publisher-Fairchild Books	ISBN:978-1-5013-2830-5 (online) ISBN:978-1-5013-2827-5 ISBN:978-1-5013-2828-2





13. SOFTWARE/LEARNING WEBSITES

- <https://www.fibre2fashion.com/industry-article/83/fashion-forecasting>
- https://www.amazon.in/Fashion-Forecasting-Bundle-Studio-Access/dp/1628925469#reader_1628925469
- https://books.google.co.in/books?id=3XFMAQAAQBAJ&printsec=frontcover&source=gbs_atb#v=onepage&q&f=false
- https://www.iknockfashion.com/technology-fashion-trend-forecasting/?gclid=CjwKCAjwsan5BRAOEiwALzomX8mbDFDzhepxvjIXzFIuyD1hFJuq0Aj80hFq-WL1fzwG7SqQyWgBKxoCdnYQAvD_BwE
- <https://www.oreilly.com/library/view/operations-management-an/9781118122679/ch8-sec004.html#:~:text=There%20are%20many%20types%20of,way%20they%20generate%20the%20forecast.&text=The%20goal%20of%20forecasting%20is,errors%20as%20low%20as%20possible.>
- <https://www.slideshare.net/suniltalekar1/fashion-forecasting-process>
- https://shodhganga.inflibnet.ac.in/bitstream/10603/144029/6/06_thesis.pdf
- <https://www.ilearnlot.com/types-importance-advantages-and-limitations-of-sales-forecasting/57809/>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	1	2	-	-	1
CO2	2	-	2	2	-	-	2
CO3	3	3	3	2	-	-	2
CO4	2	2	2	3	-	-	1
CO5	3	2	3	2	-	-	3

	PSO1	PSO2
CO1	3	1
CO2	-	-
CO3	1	-
CO4	2	1
CO5	2	3

Sign:  Name: Mrs. C.M. Ambikar (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zangure (CDC)

Government Polytechnic, Pune

'180 OB' – Scheme

Programme	Diplôma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Fashion Communication
Course Code	DD5103
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)				Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P	C		Theory		Practical		
					ESE	PA	\$ESE	PA	
				Marks	80	20	25	25	150
04	00	02	06	Exam Duration	03Hrs	01Hrs	--	--	

(\$): OE (Oral Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of essential pathways of fashion communication, and lifespan dress process, it also helps to communicate product identity and strategies by providing a common platform and using suitable techniques. Study of purpose, procedures, methods and techniques used in various photography and special events and give exposure to the fashion journalism.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Communicate the fashion creation to audience using different media.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency

1. Select relevant fashion media for promoting fashion
2. Prepare fashion report for aggregator
3. Prepare portfolio for fashion photography
4. Create content for social media management
5. Interpret the influence of social aspects on fashion communication

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1	1	Prepare a PPT on online/Offline channel retailing of any one brand	1	2
2	2	Collect Information of Two identified fashion Agencies	1	2
3		Prepare a PPT on Media Laws and Ethics	1	2
4	3	Write one page article for magazine for an apparel fashion brand	2	2
5		Develop a Blog to promote Indian art and Craft	2	2
6		Prepare a report on fashion/apparel trade fair highlights specified aspects	2	2
7	4	Write a report on Film fair Award /Beauty pageant by incorporating Photographs and keywords	2	2
8	5	Perform Photo shoot of models on live event background	3	2
9		Perform photo editing of photo shoot for enhancing presentation	3	2
10		Develop a Portfolio of Edited Photos	3	2
11		Write a review of celebrities attire/garment for press release of current trend	4	2
12	6	Create a look book for a product/Client	4	2
13		Group Discussion on Fashion Influencing on society	5	2
14		Arrange Display on Nonverbal Communication	5	2
15	All	Complete a micro project based on guidelines provided in Sr. No.11	1 to 5	4
Total Hrs				32

Sr.No.	Performance Indicators	Weightage in %
a.	Research and Data Collection	20
b.	Writing Skill/Creative Display	40
c.	Presentation Skill	40
Total		100

6 MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Computer	1 to 15
2	Printer/Projector/Scanner	
3	Editing Software	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
(SECTION-I)	
Unit 1: Introduction to Fashion Communication (10hrs, 12 marks)	
1a. Define the term Fashion Communication 1b State the role and responsibilities Fashion Communication 1c. State the structure of Fashion Communication business 1b. Explain the importance of Fashion Communication 1e. Describe the various carrier opportunities Fashion Communication	1.1 Introduction 1.2 Need and demand 1.3 Advantages and disadvantages 1.4 Structure 1.5 Trends 1.6 Types 1.7 Technological advancements 1.8 Brands and Fashion Communication 1.9 Role and responsibilities 1.10 Carrier Opportunities in Fashion Communication
UNIT 2. Philosophy of fashion Communication (10hrs, 14 marks)	

<p>2a. Describe the process of Fashion Communication</p> <p>2b. State the Functions, role and responsibilities of Fashion Communicator</p> <p>2c. Enlist Various Media Law and ethics</p> <p>2d. Explain the process of journalism</p> <p>2e. Describe the various print media.</p>	<p>2.1 Advertising</p> <p>2.2 Typographic illustrations and graphic design</p> <p>2.3 Media law and ethics</p> <p>2.4 Technical drawings visual merchandising,</p> <p>2.5 Digital arts and history</p> <p>2.6 Print media</p> <p>2.7 Publication design, lifestyle, etc.</p>
<p>UNIT 3. Trade Marketing communication (12hrs, 14 marks)</p>	
<p>3a. Classify the Channel of Communication</p> <p>3.b Detect the Do's and Don'ts of E-Commerce</p> <p>3.c Define Look-Book</p> <p>3.d State importance of Content Writing for Social media.</p>	<p>3.1 Channels of Communication</p> <p>3.1.1. Fashion Show</p> <p>3.1.2. Fashion Week</p> <p>3.1.3. Exhibitions, Trade Show and Trade Fairs</p> <p>3.1.4. Look-Book</p> <p>3.1.5. E Commerce (website and aggregators)</p> <p>3.1.6. Content Writing for Social Media</p>
<p>(SECTION-II)</p>	
<p>Unit 4: Fashion Journalism and Organization (10 hrs, 14 marks)</p>	
<p>4.a. Name the fashion trends for given situation</p> <p>4.b. Write a paragraph on the specified fashion</p> <p>4.c Enlist fashion Reporting Agencies and discuss their Role</p> <p>4.d Write a promo for a fashion Magazine.</p> <p>4.e State role of fashion association and Modeling Agencies</p>	<p>4.1. Reporting Trends</p> <p>4.2 Fashion Writers</p> <p>4.3 Fashion Cities</p> <p>4.4. Fashion Reporters</p> <p>4.5 Magazine and Feature Writing</p> <p>4.6 Fashion Association</p> <p>4.7 Modeling Agencies</p> <p>4.8 Fashion Calendar</p> <p>4.9 Public Relation Office</p>
<p>Unit 5: Fashion Photography and Events (10 hrs, 14 marks)</p>	

<p>5.a Describe photography techniques</p> <p>5.b Select Lighting and Special effects for Product</p> <p>5.c State Relevant Background for fashion</p> <p>5.d Identify various fashion poses</p> <p>5.e Describe Special Events</p>	<p>5.1 Digital Photography techniques-</p> <p>5.1.1.Photo Editing</p> <p>5.1. 2 Photographs V/s Runways</p> <p>5.1.3 Fashion Photography for Magazine</p> <p>5.1.4 Modeling, Models and their Poses</p> <p>5.1.5 Background and Layouts</p> <p>5.1.6 Lighting and Control System</p> <p>5.2 Special Events</p> <p>5.2.1 Storewide celebrations, Singular product promotion, Consumer Shows, Red carpet Events</p> <p>5.2.2. Special Fashion Presentation, Haute Couture Shows, Ready to wear Show, Trade Show, Trade Association Shows, Press Shows</p>
<p>Unit 6: Fashion Dress Communication (12hrs, 12 marks)</p>	
<p>6.a Describe nonverbal Communication.</p> <p>6.b State the importance of Fundamentalism</p> <p>6.c Describe the dressing for lifespan</p>	<p>6.1 Fashion as Social Process</p> <p>6.1.1 Introduction</p> <p>6.1.2 Dress as nonverbal Communication</p> <p>6.2. Dress and World Religions</p> <p>6.2.1 Ideology and Dress</p> <p>6.2.2 Religion Dress and Religious</p> <p>6.2.3 Fundamentalism</p> <p>6.2.4 Religious dress and social Change</p> <p>6.3.Dress modesty and Sexuality</p> <p>6.4. Religious Dress and Social Change</p> <p>6.5. Dress throughout the lifespan</p> <p>6.5.1 Infant to Adolescence</p> <p>6.5.2 Adulthood</p>

8. SUGGESTED SPECIFICATION TABLE FORQUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
(SECTION-I)						
I	Introduction to Fashion Communication	10	2	4	6	12
II	Philosophy of fashion Communication	10	4	4	6	14
III	Trade Marketing communication	12	4	4	6	14
(SECTION-II)						
IV	Fashion Journalism and Organization	10	4	4	6	14
V	Fashion Photography and Events	10	4	4	6	14
VI	Fashion Dress Communication	12	2	4	6	12
Total		64	20	24	36	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews.

- a. Report on fashion trends market survey.
- b. Visit to Mall/Fashion stores
- c. Prepare a questioner for market survey of annual fashion trend
- d. Short video Clip on Model Photo shoot

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. About **15-20% of the topics/sub-topics** which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- b. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- c. Correlate subtopics with similar designing software's.
- d. Use proper equivalent analogy to explain different concepts.
- e. Use Flash/Animation to explain various components and operation

11. Suggested Micro Projects-

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs .(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty

- a. Prepare a report on Window Displays of Various Retail Stores
- b. Create a video on upcoming trends in fashion
- c. Create a Digital Store layout.
- d. Create a professional Digital Flyer to promote Garments Designed and Manufactured by personnel.
- e. Compile and Design Content for an Online promotion of Specific Brand.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Meaning of dress	Mary Lynn Damhorst, Fairchild Books	ISBN:9781609012786
2	Fashion as Communication	Malcolur Barmard Rout, ASQC, Quality Press USA8	ISBN:9780415260183 ISBN:1415260183
3	The Aesthetics of merchandising presentation	Weishar, Joseph Ohio St Media group international Inc-2005	ISBN:0944094473 ISBN:9780944094471
4	Visual Merchandising for Fashion	Sarah Bailey and Jonathan Baker, Fairchild BooksUK	ISBN:9782940447701

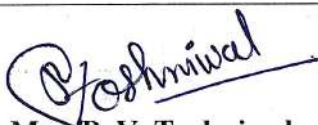



13. SOFTWARE/LEARNING WEBSITES

1. www.videmo.com
2. www.fiber to fashion.com
3. www.visual merchandising PPT's of fixtures
4. <http://Promo style video on fashion show>
5. <http://Ralph Lauren 4-dimensional promotion>
6. www.Social media for fashion marketing
7. www.Digital marketing strategies for fashion and luxury brands
8. <http://Social media management>

14. PO/PSO - COMPETENCY- CO- MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2	-	2	-	2	-	3
CO2	-	-	1	-	2	-	2
CO3	2	-	2	-	-	-	2
CO4	2	2	-	-	-	-	3
CO5	2	-	-	-	-	-	2

	PSO1	PSO2
CO1	3	3
CO2	2	-
CO3	-	-
CO4	-	3
CO5	2	2

Sign:  Name: Mrs. P. V. Toshniwal (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB'– Scheme

Programme	Diplôma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Technology of Knits
Course Code	DD 5104
Prerequisite course code and name	NA
Class Declaration	YES

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme					
				Theory		Practical		Total Marks	
L	T	P	C	ESE	PA	\$ESE	PA		150
04	00	02	06	Marks	80	20	25	25	
				Exam Duration	3Hrs	1 Hr	--	--	

(\$): OE (Oral Examination)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

Knitting is very efficient and versatile method of fabric making. The loop structure contributes outstanding elasticity to fabric enhancing applications of fabric. This course is developed to use the fundamental studies of knitting in manufacturing.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Select appropriate knits for manufacturing.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Define knitting terminologies and explain knitting evolution.
2. Explain principles of knitting and machines used for it.
3. Perceive quality parameters of knit.
4. Compare knitted fabrics according to structure.
5. Identify advantages, disadvantages, defects and remedies of knitted fabrics.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	HAND KNITTING- Introduction of Needles and Yarns	1,2,3,4,5	02
2.		Prepare Sample using Purl Stitch.		04
3.		Prepare Sample using 1*1 Rib Stitch		04
4.		Prepare Sample using 2*2 Rib Stitch.		04
5.		Prepare Sample using Interlock Stitch.		03
6.		Prepare Sample using Cable Stitch.		03
8.	2	MACHINE KNITTING- Online Survey and assignment on types of knits.	1,2,3,4,5	02
9.		Prepare 5 Swatch Board of various knitted fabrics.		03
10.		Prepare quality Report of above swatch boards considering parameters- 1. Yarn Count 2. Stitch Length 3. GSM Calculations		03
11	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	04
Total Hrs				32

Note:-

1. A group of 4 to 5 students will prepare window display as per instructions.
2. Remaining students will prepare PPT's on that display as an assignment.

Sr.No.	Performance Indicators	Weightage in %
a.	Study of yarns.	20
b.	Observing stitch style.	20
c.	Implementing of stitch style.	10
d.	Finishing of Stitch.	10
e.	Collection of textile.	20
f.	Accuracy in quality parameters.	10
g.	Completion in time	10
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Hand Knitting Needles.	1 to 11
2	Yarns for Knitting.	
3	Types of Knitting fabrics.	
4	Pick Glass.	

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section I	
UNIT 1. FROM HAND KNITTING TO HAND FRAME KNITTING. (12hrs,14marks)	
1a. Enlist the stitches used for knitting 1b. Define terminologies of knitting. 1c. Explain the Principles of hand knitting using two pins 1d. Give a note on Hand Knitting to Hand Frame Knitting.	1.1 The Evolution and Principles of Knitting 1.1.1 Principles of hand knitting using two pins. 1.1.2 The Invention of Stocking Hand Frame. 1.1.3 Principles of frames Knitting. 1.2 Principles of intermeshing of Loops. 1.3 Basic Terminologies- 1.3.1 Course 1.3.2 Wales 1.3.3 Stitch length 1.3.4 Needle Loop 1.3.5 Shrinker Loop 1.3.6 Face Loop 1.3.7 Back Loop 1.3.8 Course Length 1.4 Stiches for Knitting- 1.4.1 Knit 1.4.2 Tuck and Float 1.4.3 Miss 1.4.4 Pearl 1.4.5 Loop
UNIT 2 CLASSIFICATION OF KNITTING (14hrs,14marks)	
2a. Give classification of Knitting. 2b. State the structure of warp knitting. 2c. Differentiate between warp and weft knit. 2d. Mention two uses of warp knit	2.1 Classification Of Knitting. 2.2 Warp; Weft and Circular Knitting- 2.2.1 Fundamentals 2.2.2 Knitted Structure. 2.2.3 Advantages and Disadvantages. 2.2.4 Comparison between Warp/Weft/Circular Knitting. 2.2.4 Uses Or Applications 2.2.5 Comparison of Woven and Knits. 2.2.6 Comparison of warp and weft knit 2.2.7 Mega Knitting.
UNIT 3 QUALITY PARAMETERS. (08hrs,12marks)	
3a. Explain knit defects with remedies. 3b. Explain parameters of knit. 3c. Define stretch count. 3d. Define calculation of spriality of knit.	3.1 Knit Fabric Defects-Causes and Remedies 3.2 Test For Knit Quality- 3.2.1 GSM CPI and WPI 3.2.2 Calculation of spriality 3.2.3 Barre 3.2.4 Course Length 3.2.5 Yarn Count 3.2.6 Stretch Memory

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
	3.3 Knit Parameters- 3.3.1 Stitch Length 3.3.2 Tightness Factors 3.3.3 GSM Calculations 3.3.4 Fabric Density
Section II	
UNIT 4 MACHINES FOR KNITS. (10hrs,15marks)	
4a. Enlist the parts of knitting machine. 4b. State the principles of Rib Machine. 4c. Enlist the purpose of Latch Wire in Knitting Machine. 4d. Give the principles of Interlock Machine.	4.1 Principles of Knitting Machines. 4.1.1 Single Jersey Machine 4.1.2 Rib Machine 4.1.3 Interlock Machine 4.2 Elements of Knitting Machines. 4.2.1 Needle Bar 4.2.2 Sinker Bar 4.2.3 Pressure Bar 4.2.4 Latch Wire 4.2.5 Pattern Drum 4.2.6 Pattern Wheel 4.2.7 Chain Links 4.2.8 Lapping Movements
UNIT 5 DYEING AND FINISHING. (06hrs,10marks)	
5a. Enlist the finishing process used for knitting. 5b. Enlist natural and chemical dyes used for the knitted fabrics. 5c. State the basic procedure used to dye knitting fabric. 5d. State the process of scoring and anti-creasing finish.	5.1 Dyeing and Finishing of Knitted Fabric- 5.1.1 Process 5.1.2 Scouring 5.1.3 Bleaching 5.1.4 Dyeing 5.1.5 Softener padding 5.1.6 Relax-drying 5.1.7 Anti Creasing Finish 5.1.8 Color Fastness Finish 5.1.9 Dyes Used- Natural and Chemical
UNIT 6 KNITTED FABRICS. (14hrs,15marks)	
6a. State the principles of single jersey machine. 6b. Explain the structure of single jersey fabric. 6c. Enlist the types of knitted fabrics.. 6d. Explain the present day scenario of knitted fabric.	6.1 Classification, physical properties, Comparison, Structure and application of Knitted Fabric- 6.1.1 Single Jersey 6.1.2 Double Jersey 6.1.3 Rib 6.1.4 Purl 6.1.5 Jacquard

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
I	From hand knitting to hand frame knitting.	12	06	05	03	14
II	Classification of knitting	14	05	05	04	14
III	Quality parameters	08	04	04	04	12
Section II						
IV	Machines for knits.	10	03	05	07	15
V	Dyeing and Finishing.	06	03	03	04	10
VI	Knitted fabrics.	14	03	04	08	15
Total		64	24	26	30	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

- a) Visit to textile mill
- b) Analyze the specifications, costs, quality and availability for various types of knitted fabrics in local market.
- c) Collection the information from internet about different knitting machine with brand name.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Demonstration method
- j. Arrange guided industrial visits to knitted fabric units and watch dyeing and finishing techniques.

- k. Motivate students to use internet and collect name, addresses, catalogues, rates, specifications of manufacturers of knitted machines and equipment.

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PROs, UOs and ADOs.(Affective Domain Outcomes) .Each student will have to maintain activity chart consisting of individual contribution in the project work and give a seminar presentation of it before submission.. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty

- Visit nearby industries engaged in knitted fabric process and submit a report.(Each group consist of 3 students will visit different industry)
- Raw materials used for knitted fabric.(yarns/fibers),Library formation of Knitted fabrics. (Swatches any 10).
- Knitting Machines.(Specification, utilization)
- Dyeing processandfinishing techniques used of Knitted Fabric.
- Many more.....

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Knitting Technology	D.J.Spencer, Woodland Publishing Limited	ISBN:9781855733336
2	Fundamentals and advances in Knitting Technology	Sadan Chandra Roy, Woodland Publishing Limited	ISBN:9789380308166
3	Fiber to Fabric	Bernard P. Carbman, N. Yoris MGH	ISBN:0-07-013137-6

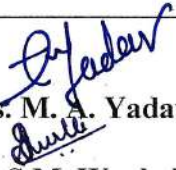


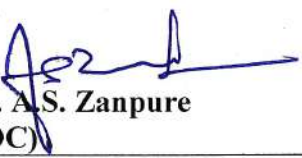
13. SOFTWARE/LEARNING WEBSITES

- ApparelClothing Manufacturing
- en.wikipedia.org/wiki/Knitting
- [www.garmentsmerchandising.com/List of fabric used in knit garments-manufacturing](http://www.garmentsmerchandising.com/List_of_fabric_used_in_knit_garments-manufacturing)

14. PO/PSO - COMPETENCY CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	1	2	2	2	1	-	3
CO2	2	2	2	2	-	-	2
CO3	2	3	3	2	3	-	2
CO4	2	2	-	1	3	2	2
CO5	1	2	2	-	-	-	1

	PSO1	PSO2
CO1	3	2
CO2	2	2
CO3	3	3
CO4	-	2
CO5	-	1

Sign:  Name: Mrs. M. S. Yadav Name: Ms. S.M. Waghchaure (Course-Experts)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diploma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Quality Standards in Apparel Manufacturing
Course Code	DD5105
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C		ESE	PA	\$ ESE	PA	
04	00	02	06	Marks	80	20	25	25	150
				Exam Duration	03Hrs	01Hrs	--	--	-

(\$): OE (Oral Examination -External)

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides the knowledge of quality standards in apparel Industry. This may include quality checking and testing from fabric level, cutting, sewing, finishing, pressing and packaging stages. The study of quality standards will be useful in producing defect free garments, cost cutting, waste reduction and customer satisfaction in garment industries.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Maintain Quality standards for product and production process of apparel industry.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

1. Identify the dimension of quality and inspection.
2. Interpret the concept of quality standards
3. Determine labeling of apparel.
4. Analysis various quality textile testing techniques.
5. Evaluate the flammability technique for apparel.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Prepare a QC checklist for appearance of raw material	1,2	02
2.		Study fabric defect and find the causes and remedies for the same	1,2	02
3.	2	Assignment on pre-production inspection by using cause-and-effect diagram.	1,2	02
4.		Determine the appearance of Strength properties of given garment.	1,2,4	02
5.		Exercise on dimensional changes in given apparel due to laundering by using cause-and-effect diagram.	1,2,4	02
6.		Exercise on Dimensional changes in Apparel due to dry-cleaning by using Scatter diagram.	1,2,4	02
7.		Prepare a Kanban Board for given garment manufacturing production floor.	1,2,4	02
8.		Prepare a monthly rejection rate chart of a company in total production due to fabric fault.	1,2,4	02
9.	3	Prepare a sample of brand label and hang tags of given apparel company	3	02
10.		Prepare a sample of care and size label of given apparel company	3	02
11.	4	Assignment on pull test of button.	1,2,4	02
12.		Assignment on fatigue test to check the durability and function of garment accessories	1,2,4	02
13.		Assignment on stretch test for elastic fabric and straps	1,2,4	02
14.		Make a QC checklist of buttonholes for	1,2,4	02

		stitching defects		
15.	5	Prepare a QC checklist for final inspection	1,2,4	02
16	All	Complete a micro project based on guidelines provided in Sr. No. 11	1 to 5	4
		Total Hrs		32

NOTE:1 or 2 of the practicals will be conducted in the industry for learning purposes.

Sr.No.	Performance Indicators	Weightage in %
a.	Concept interpretation	30
b.	Using quality tools	30
c.	Report writing	20
d.	Submission of report writing on time	20
	Total	100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment Sr. No.
1	Different fabrics, garments, button, elastics, paper, chart paper, pen ,pencil, scale etc	1 to 16

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section-I	
UNIT 1. Introduction of quality and inspection (12hrs,16marks)	
1a. Define the term quality. 1b. State the importance of quality. 1c. Define the term inspection 1d. List the types of inspection. 1e. Name the types of pre-production inspection. 1f. Enlist various types of in process inspection. 1g. Describe the process of final inspection. 1h. Identify the defects in woven fabrics.	1.1 Introduction of quality 1.1.1 Definition of Quality 1.1.2 Importance of Quality 1.2 Types of Inspection 1.2.1 Pre-production inspection 1.2.2 Raw material inspection 1.2.3 Fabric weight 1.2.4 Dimensional stability 1.2.5 Pilling resistance and pile retention 1.2.6 Stretch recovery 1.2.7 Garment accessories components-button, sewing thread 1.3 In process inspection 1.3.1 Spreading

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
1i. Identify the defects in knitted fabrics	1.3.2 Cutting 1.3.3 Sewing 1.3.4 Pressing 1.3.5 Finishing. 1.4 Final Inspection 1.4.1 Overall appearance 1.4.2 Sizing 1.4.3 Garment Fitting 1.5 Defects in woven and Knitted Fabrics 1.5.1 Bow and skewers in woven and knitted 1.5.2 Distortion of yarn
UNIT 2. Quality Management (10hrs,12marks)	
2a. Summarize the managing quality through inspection. 2b. Elaborate the managing quality through testing. 2c. State the benefits of seven tools of quality.	2.1 Managing quality through inspection 2.2 Managing quality through Testing 2.3 Seven tools of quality 2.3.1 Cause-and-effect diagram 2.3.2 Check sheet 2.3.3 Histogram 2.3.4 Pareto chart 2.3.5 Scatter diagram 2.3.6 Stratification 2.4 Lean manufacturing 2.4.1 Benefits of Lean manufacturing
UNIT 3 Apparel Standards (08hrs,12marks)	
3a. State the benefits of standards. 3b. Identify the sources of standards. 3c. Describe the ISO 9000 Principles. 3d. State ISO 9000 Advantages.	3.1 Introduction for Apparel Standards 3.1.1 Benefits of Standards 3.1.2 Levels of Standards 3.1.3 Sources of Standards 3.1.4 ISO 9000 series Standards 3.1.5 ISO 9000 Principles 3.1.6 ISO 9000 Advantages
Section-II	
UNIT 4 Labeling of apparel and Shade sorting (10 hrs,10marks)	
4a. Enlist the types of labels used in garment. 4b. State ISO and ASTM Care symbols. 4c. Define shade sorting. 4d. Explain the process of shade	4.1 Types of labels used in garments 4.1.1 ISO Care symbols 4.1.2 ASTM Care symbols 4.1.2 Brand label 4.1.3 Size label 4.1.4 Content / Fiber label

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
sorting. 4e.Name the tools used for color measuring.	4.1.5 Hang tags 4.2 Fabrics used in labels 4.3 Shade Sorting 4.3.1 Process of shade sorting 4.3.2 Instrumental shade sorting 4.3.3 Color majoring instruments 4.3.4 Fundamentals of Color 4.3.5 Shade numbering 4.3.6 Shade tapering
UNIT 5 Textile Testing (16hrs,20marks)	
5a.State the types of textile testing. 5b.Describe chemical testing on garment. 5c. Explain physical testing on garment. 5d.Enlist various types of garment testing. 5e.Describe strength properties of apparel. 5f.Summarize fabric stretch properties. 5.gState the process of abrasion resistance. 5h.State the process of button testing. 5i. Mention the process of zipper and sewing thread testing.	5.1 Types of Textile Testing 5.1.1 Testing of yarn 5.1.2 Basics of yarn numbering system count-tex-Deniers. 5.1.3 Yarn strength 5.2 Testing of Fabrics 5.2.1 Chemical Testing 5.2.2 Colour fastness to washing , and dry cleaning 5.2.3 Stain release 5.2.3 Water Resistance and Water Repellency. 5.2.4 Physical Testing 5.2.5 Tensile Testing 5.2.6 Tearing Testing 5.2.7 Crease Recovery Testing 5.2.8 Pilling Testing 5.2.9 Drape testing 5.3 Testing of Garments 5.3.1 Precision accuracy of Test method 5.3.2 Strength properties of apparel 5.3.3 Atmospheric conditions for testing 5.3.4 Fabric stretch properties 5.3.5 Dimensional changes in Apparel due to laundering, dry-cleaning, steaming and pressing 5.3.6 Abrasion Resistance 5.3.7 Testing of Buttons 5.3.8 Testing of Zippers 5.3.9 Testing sewing threads
UNIT 6 Flammability (08hrs,10marks)	
6a.Define the term flammability. 6b.Describe the Factors affecting fabric Flammability. 6c.Analysis 45degree Flammability Test methods. 6d.State Influence of laundering	6.1 Flammability of clothing textile 6.1.1 Factors affecting fabric Flammability 6.1.2 45degree Flammability Test methods 6.1.3 Flammability of children's sleep wear 6.1.4 Flammability of adult garment 6.1.5 Influence of laundering on flame retardancy

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
on flame retardancy	

8. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section-I						
I	Introduction of quality and inspection	12	04	04	08	16
II	Quality Management	10	04	04	04	12
III	Apparel Standards	08	02	04	04	12
Section-II						
IV	Labeling of apparel and Shade sorting	10	04	04	04	10
V	Textile Testing	16	08	06	06	20
VI	Flammability	08	02	04	04	10
Total		64	24	26	30	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews

- a. Prepare folder based on practical performed in laboratory.
- b. Prepare a chart of seven tools of quality.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).

- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.
- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Teacher should plan field visits, market surveys etc.
- j. Arrange expert lectures and workshop to demonstrate the various techniques of surface ornamentation.
Teacher should plan field visits, market surveys etc

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In the first four semesters, the micro-projects are group-based. However, in the fifth and sixth semesters, it should preferably be **individually** undertaken to build up the skill and confidence in every student to become a problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain a dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than **16 (sixteen) student engagement hours** during the course. The student ought to submit the micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty.

- a. Collect ten different types of woven fabric defects, find causes and remedies for the same and specify the problems due to the defect in garment manufacturing.
- b. Collect ten different types of knitted fabric defects, find causes and remedies for the same and specify the problems due to the defect in garment manufacturing.
- c. Market survey for different apparel industry brands and prepare a booklet for the same.
- d. Visit to nearby garment manufacturing industries that perform quality audits for different trims and accessories. Prepare a power point presentation for the same.
- e. Prepare an audio visual power point presentation for seven tools of quality.
- f. Prepare charts of ISO and ASTM care symbols.
- g. Folder collection of norms and standard test procedures of ASTM and ISO.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Managing Quality in the Apparel Industry	Pradip V Meheta ,Sathish K Bharadwaj -New Age International Publication	ISBN:9788122434286
2	The Technology of Clothing Manufacture	Harold Carr and Barbara Latham, Blackwell Science, Oxford	ISBN:9780632021932
3	Hand book of Textile Testing and Quality Control	Grover. E.B, Hamby .D.C Textile book publisher,1960	ISBN:9780783734460





13. SOFTWARE/LEARNING WEBSITES

- 1) www.textilelearner.blogspot.com/2012/02/fabric-strength-tester-determination-of.html
- 2) <https://www.textilemates.com/bowing-skewing-problems-fabric/>

14. PO/PSO – COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	2	2	-	-	2
CO2	3	-	2	2	-	-	2
CO3	3	3	2	2	-	-	2
CO4	1	-	-	3	-	-	2
CO5	3	2	2	2	1	-	3

	PSO1	PSO2
CO1	3	-
CO2	3	-
CO3	3	-
CO4	3	-
CO5	3	-

Sign:  Name: Ms. N. V. Gondane (Course-Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

Government Polytechnic, Pune

'180OB' – Scheme

Programme	Diplôma in Dress Designing and Garment Manufacturing
Programme code	01/02/03/04/05/06/07/ 08 /16/17/21/22/23/24/26
Name of Course	Apparel Management
Course Code	DD5106
Prerequisite course code and name	NA
Class Declaration	Yes

1. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)		Examination Scheme				
					Theory		Practical		Total Marks
L	T	P	C		ESE	PA	\$ ESE	PA	
				Marks	80	20	25	25	150
04	00	02	06	Exam Duration	03Hrs	01Hrs	--	--	--

(\$): *OE (Oral Examination -External)*

Legends: L- lecture, T-Tutorial, P-practical, C- Credits, ESE-End semester examination, PA- Progressive Assessment (Test I, II/Term Work), *- Practical Exam, \$-Oral Exam, #-Online Examination, Each Lecture/Practical period is of one clock hour.

2. RATIONALE

This course provides an introductory view of the managerial and technical factors which influence the day to day operation of a apparel factory. The course makes aware the students about the role of the management which changes frequently and guides to reconcile the conflicting requirements of the market and its manufacturing facilities in order to stay in business.

3. COMPETENCY

The aim of this course is to attend following industry identified competency through various teaching learning experiences:

- **Maintenances of Apparel Industry through management components of its own department.**

4. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry oriented COs associated with the above mentioned competency:

- 1 Perceive structure and principles of clothing Industry.
- 2 Classify the role of Designing Department.
- 3 Develop the skills of Budgeting .
- 4 Elaborate the function of Purchasing Department.
- 5 Identify the objectives of production Department.
- 6 Explain importance of Production Planning and control.

5. SUGGESTED PRACTICALS/ EXERCISES

Sr. No.	Unit No.	Practical Exercises (Outcomes in Psychomotor Domain)	Relevant CO	Approximate Hours Required.
1.	1	Assignment on fashion trend of last 3 year on western tops	2	04
2.		Assignment on fashion trend of 10 different brands of apparel.	2	04
3.	2	Make marketing calendar for a particular company.	1	02
		Prepare a marketing planning sheet for a product.	1	02
4.	3	Prepare a balance sheet for a particular garment manufacturing company.	3	02
		Prepare cost sheet for five different types of garments.	3	06
5.	4	Prepare a PO for a particular garment manufacturing company.	4	04
6.		Prepare a stock inventory list for garment company	4	04
7.	5	Assignment on machine maintenances and human resources.	5	04
Total Hrs				32

Sr.No.	Performance Indicators	Weightage in %
a.	Concept interpretation	20
b.	Using quality tools	40
c.	Report writing	20
d.	Submission of report writing on time	20
Total		100

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specification mentioned here will usher in uniformity in conduct of practical, as well as aid to procure equipment by authorities concerned.

Sr.No.	Major Equipment/ Instruments Required	Experiment. No.
1.	Different fabrics, garments, button, elastics, paper, chart paper, pen ,pencil, scale etc	1 to 7

7. THEORY COMPONENTS

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Section-I	
UNIT 1. The Organization of the Apparel Industry (8hrs,12marks)	
1a. Interpret the principles of management. 1b. Summarize the functions of Management. 1c. Define Management.	1.1 The Organization of a Apparel Industry 1.1.1 Principles of Management 1.1.2 Definition of Management 1.1.3 Functions of Management-Planning, Organizing, Staffing, Direction, Control.
UNIT 2 Design Department (12hrs,14marks)	
2a . Define Forecasting. 2b.Determine Fashion Trends. 2c.Calculate the price structure of Design department. 2d. Describe designing ,collection and planning of Design department. 2e.Compare Pattern making and Pattern Grading. 2f.State the process of Sample Garment.	2.1 Design Department 2.1.1 Forecasting 2.1.2 Fashion Trends 2.1.3Price Structure 2.1.4 Designing 2.1.5 Collection 2.1.6 Planning 2.1.7 Pattern Making 2.1.8 Production of Sample Garment 2.1.9 Pattern Grading.
UNIT 3 Marketing Department (10hrs,14marks)	

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
3a. Define Marketing Management. 3b. Use of marketing calendar. 3c. State the importance of product pricing and price evaluation. 3d. Explain the functions of Distribution and selling. 3e. Summarize sale Forecasting.	3.1 Marketing Department 3.1.1 Definition of Marketing Management 3.1.2 Marketing calendar 3.1.3 Product Pricing 3.1.4 Product Planning 3.1.5 Customers 3.1.6 Distribution and Selling 3.1.7 Sales Forecasting
Section-II	
UNIT 4 Finance Department (10hrs,12marks)	
4a. Define Finance Management. 4b. Use of budgeting. 4c. Explain the functions of Finance Department. 4d. Summarize Garment costing Administration.	4.1 Finance Department 4.1.1 Definition of Finance Management 4.1.2 Functions of the Finance Department 4.1.3 Providing Management Information 4.1.4 Budgeting and Garment Costing Administration
UNIT 5 Purchasing Department (10hrs,14marks)	
5a. Determine the function of purchase department. 5b. Calculate the price structure of purchase department. 5c. Explain store keeping and stock management strategy. 5d. State the process of Purchase Order.	5.1 Purchasing Department 5.1.1 Function of the Purchase Department 5.1.2 Information of Suppliers 5.1.3 Prices 5.1.4 Speculative buying 5.1.5 Store keeping and Stock management 5.1.6 Purchase Order.
UNIT 6 Production and Operation Department (14hrs,14marks)	
6a. Determine the function of production department. 6b. State the importance of Personnel and Training. 6c. Describe the machinery, Equipment and General Maintenance of Production department. 6d. Discover the concept Technical stores. 6e. State the process of production planning and control. 6f. Explain in brief Budgetary control. 6g. Classify company calendar . 6h. Distinguish between the pre-production planning and control and production planning and control . 6i. Evaluate Order Concentration..	6.1 Production Department 6.1.1 Manufacturing Functions 6.1.2 Service Functions 6.1.3 Personnel and Training 6.1.4 Machinery and Equipment Maintenance 6.1.5 Production Planning and Control 6.1.6 Budgetary Control 6.2 Operations Department 6.2.1 Company calendar 6.2.2 Order Concentration 6.2.3 The Production order 6.2.4 Marker and cut Planning

Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
6j.State the Production order process. 6k.Discover the concept of Marker and cutting planning.	

8. SUGGESTED SPECIFICATION TABLE FORQUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section-I						
I	The Organization of the Apparel Industry	08	02	04	04	12
II	Design Department	12	06	04	04	14
III	Marketing Department	10	06	04	04	14
Section-II						
IV	Finance Department	10	04	04	04	12
V	Purchasing Department	10	06	04	04	14
VI	Production and Operation Department	14	08	04	04	14
Total		64	32	24	24	80

9. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related *co-curricular* activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews

- a. Prepare folder based on practical performed in laboratory.
- b. Prepare report of Design department process.

10. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course

- a. Massive open online courses (*MOOCs*) may be used to teach various topics/sub topics.
- b. About *15-20% of the topics/sub-topics* which is relatively simpler or descriptive in nature is to be given to the students for *self-directed learning* and assess the development of the COs through classroom presentations (see implementation guideline for details).
- c. With respect to item No.9, teachers need to ensure to create opportunities and provisions for *co-curricular activities*.
- d. Guide student(s) in undertaking micro-projects.
- e. Correlate subtopics with automation.
- f. Use proper equivalent analogy to explain different concepts.

- g. Use Flash/Animations to explain various components, operation and its application.
- h. Teacher should ask the students to go through instruction and Technical manuals
- i. Teacher should plan field visits, market surveys etc.
- j. Arrange expert lectures and workshop to demonstrate the various techniques of surface ornamentation.
Teacher should plan field visits, market surveys etc

11. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her. In the first four semesters, the micro-project are group-based. However, in the fifth and sixth semesters, it should be preferably be **individually** undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than **16 (sixteen) student engagement hours** during the course. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

- a. Market survey for different apparel industry marketing strategy and prepare a audio-video presentation for the same.
- b. Visit to nearby garment manufacturing industries and prepare a power point presentation for the same.
- c. Photos collection on PPC procedure.
- d. Prepare an audio visual power point presentation for cutting department.
- e. Prepare flow charts of Production department procedure.
- f. Prepare Company calendar for a particular apparel industry.

12. SUGGESTED LEARNING RESOURCES

Sr.No.	Title	Author, Publisher, Edition and Year of publication	ISBN Number
1	Fashion Concept to Consumer	Gini Stephens Frings Pearson-2004	ISBN:9780131173385
2	Fashion Retailing	Dimitri Koumbis Publisher-fairchild books	ISBN:9782940496235
3	The Apparel Industry	Richard. M.Jones Publisher-Blackwell	ISBN:9781405167680





13. SOFTWARE/LEARNING WEBSITES

1. www.nptel.com
2. www.ombooks.com
3. www.bloomsburyfashioncentral.com
4. www.M.barnesandnoble.com

14. PO/PSO – COMPETENCY- CO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	-	2	2	-	-	2
CO2	3	-	2	2	-	-	2
CO3	3	3	2	2	-	-	2
CO4	1	-	-	3	-	-	2
CO5	3	2	2	2	1	-	3
CO6	1	2	2	2	2	2	3

	PSO1	PSO2
CO1	3	-
CO2	3	-
CO3	3	-
CO4	3	-
CO5	3	-
CO6	3	-

Sign:  Name: Ms. N.V. Gondane (Course Expert)	Sign:  Name: Mr. V. G. Tambe (Head of Department)
Sign:  Name: Mr. V. G. Tambe (Program Head of Department)	Sign:  Name: Mr. A.S. Zanpure (CDC)

GOVERNMENT POLYTECHNIC PUNE

DEPARTMENT OF DRESS DESIGNING AND GARMENT MANUFACTURING Equivalence for 180 (S) Curriculum with 180 (OB) Curriculum

Sr. No.	Appendix-2 Existing 180 (S) Curriculum												Appendix-2 Proposed 180 (OB) Curriculum												Remarks Equivalent/Not Equivalent	Signature of faculty
	Course code	Course Name	CREDITS				EXAM SCHEME				Course code	Course Name	CREDITS				EXAM SCHEME									
			TH	PR	TU	Total	TH	PA	PR	OR			TW	Total	TH	PR	TU	Total	TH	PA	PR-ESE	PR-PA	Total			
LEVEL-1 (Foundation Level Courses)												LEVEL-1 (Foundation Level Courses) (ALL COMPULSARY)														
1	HU181	English	2	2	0	4	80	20	0	0	25	125	HU1101	Communication Skill-I	2	0	1	3	40	10	25	25	100	Not Equivalent		
2	HU182	Communication Skill	2	2	0	4	80	20	0	25	0	125	HU1102	Communication Skill-II	2	0	1	3	40	10	0	50	100	Not Equivalent		
3	DD181	Elements of Drawing	2	4	0	6	0	0	50	0	50	100	DD-1101	Fundamentals of Drawing	0	4	0	4	0	0	50	50	100	80%Equivalent	<i>P. Prabhakar</i>	
4	DD182	Garment Finishing Technique	3	5	0	8	40	10	50	0	100	200	DD-1102	Manufacturing Technology	4	4	0	8	80	20	50	50	200	Not Equivalent	<i>P. Prabhakar</i>	
5	DD183	Introduction to Drafting	2	4	0	6	0	0	50	0	50	100	DD-1103	Basics of Drafting	2	4	0	6	0	0	50	50	100	80%Equivalent	<i>P. Prabhakar</i>	
6	DD184	Equipment and Machinery of Apparel	3	0	0	3	40	10	0	0	0	50	DD-1104	Tool Engineering	4	0	0	4	80	20	0	0	100	Not Equivalent	<i>Ambikade</i>	
LEVEL-2(Core Technology Courses)												LEVEL-2(Core Technology Courses)														
7	CM286	Computer Fundamentals	1	2	0	3	0	0	50	0	25	75	CM2102	Fundamental of ICT	1	2	0	3	0	0	25	25	50	Not Equivalent		
8	DD281	Element of Textile	4	0	0	4	40	10	0	0	0	50	DD-2101	Textile Science-I	4	0	0	4	80	20	0	0	100	Not Equivalent		
9	DD282	Needle Work	1	4	0	5	0	0	50	0	50	100	DD-2102	Fundamentals of Embroidery	0	4	0	4	0	0	50	50	100	90%Equivalent	<i>P. Prabhakar</i>	
10	DD283	Fashion Drawing	2	4	0	6	0	0	50	0	75	125	DD-2103	Fashion Drawing	0	4	0	4	0	0	50	50	100	80%Equivalent	<i>P. Prabhakar</i>	
11	DD284	Garment Construction	2	6	0	8	0	0	50	0	50	100	DD-2104	Kids Garment Manufacturing	2	6	0	8	40	10	50	50	150	Not Equivalent	<i>P. Prabhakar</i>	
12	No Course in 180s											DD-2105	History of Design	3	0	0	3	40	10	0	0	50	Newly Introduced course	<i>P. Prabhakar</i>		
13	No Course in 180s											DD-2106	Fashion Styling	3	0	0	3	40	10	0	0	50	Newly Introduced course	<i>P. Prabhakar</i>		
14	No Course in 180s											SC-2107	Textile Chemistry	3	2	0	5	80	20	25	25	150	Newly Introduced course	<i>P. Prabhakar</i>		
LEVEL-3 Basic Technology Courses												LEVEL-3 Basic Technology Courses														
15	DD 382	Graphic Design	1	3	0	4	0	0	50	0	50	100	DD-3101	Graphic Designing	0	4	0	4	0	0	50	50	100	80% Equivalent	<i>Ambikade</i>	
16	DD384	Pattern Making and Apparel Construction-I	2	7	9	0	0	0	100	0	100	200	DD-3102	Apparel Manufacturing Technology	2	6	0	8	40	10	100	50	200	Not Equivalent	<i>P. Prabhakar</i>	
17	DD385	Pattern Making and Apparel Construction- II	2	7	9	0	0	0	100	0	100	200														
18	DD487	Men's wear	4	5	9	0	0	0	100	0	100	200	DD-3103	Industry Manufacturing Technology	4	4	0	8	80	20	50	50	200	Not Equivalent	<i>P. Prabhakar</i>	
19	DD386	Fashion Illustration-I	1	4	5	0	0	0	100	0	100	200	DD-3104	Illustration Techniques	0	4	0	4	0	0	50	50	100	85% Equivalent	<i>P. Prabhakar</i>	
20	DD387	Fashion Illustration-II	1	4	5	0	0	0	100	0	100	200	DD-3105	Advanced Illustration Techniques	0	4	0	4	0	0	100	50	150	80% Equivalent	<i>P. Prabhakar</i>	
21	DD 388	Fashion Studies	3	0	0	3	40	10	0	0	50	100	DD-3106	Fashion Merchandising	4	0	0	4	80	20	0	0	100	80% Equivalent	<i>P. Prabhakar</i>	
22	No Course in 180s											DD3107	Colour Theory	4	0	0	4	80	20	0	0	100	Newly Introduce course	<i>P. Prabhakar</i>		
23	DD 281	Elements of Textile	4	0	0	4	40	10	0	0	0	50	DD-3108	Textile Science-II	4	0	0	4	80	20	0	0	100	80% Equivalent	<i>P. Prabhakar</i>	
LEVEL-4(A) Auxiliary Level Courses												LEVEL-4(A) Auxiliary Level Courses														
24	AU481	Environmental Science	0	2	0	2	0	0	50	0	0	50	AU4101	Environmental Science	0	2	0	2	0	0	0	50	50	80% Equivalent	<i>P. Prabhakar</i>	
25	AU482	Community Development	2	0	0	2	20	80	0	0	0	100	No Course in 180 OB													
26	AU483	Renewable & Sustainable Energy Management	2	0	0	2	20	80	0	0	0	100	AU4102	Renewable Energy Technologies	2	0	0	2	40	10	0	0	50	80% Equivalent		
27	AU484	Engineering Economics	2	0	0	2	20	80	0	0	0	100	AU4103	Engineering Economics	2	0	0	2	40	10	0	0	50	80% Equivalent	<i>Ambikade</i>	
28	No Course in 180s											AU4104	Ethical Sources & Sustainability	2	0	0	2	40	10	0	0	50	Newly Introduce course	<i>P. Prabhakar</i>		
29	No Course in 180s											AU4105	Digital Marketing	2	0	0	2	40	10	0	0	50	Newly Introduce course	<i>K. K.</i>		

LEVEL-4(B) Management Level Courses													LEVEL-4(B) Management Level Courses												
30	MA481	Construction Management	3	0	0	3	20	80	0	0	0	100	No Course in 180 OB												
31	MA482	Industrial Organisation & Management	3	0	0	3	20	80	0	0	0	100	MA4102	Industrial Organisation & Management	2	0	0	2	40	10	0	0	50	80% Equivalent	
32	MA483	Entrepreneurship Development	3	0	0	3	20	80	0	0	0	100	MA4101	Entrepreneurship & Startups	2	0	0	2	40	10	0	0	50	80% Equivalent	(H/S)
33	MA484	Materials Management	3	0	0	3	20	80	0	0	0	100	MA4103	Materials Management	2	0	0	2	40	10	0	0	50	80% Equivalent	BS
34	MA485	Supervisory Management	3	0	0	3	20	80	0	0	0	100	No Course in 180 OB												
35	MA486	Total Quality Management	3	0	0	3	20	80	0	0	0	100	No Course in 180 OB												
36	MA487	Management Information System	3	0	0	3	20	80	0	0	0	100	MA4106	Information Management	2	0	0	2	40	10	0	0	50	Not Equivalent	Prof. P. S. Patil
37	MA488	Apparel Management	3	0	0	3	20	80	0	0	0	100	No Course in 180 OB												
38	No Course in 180s												MA4104	Disaster Management	2	0	0	2	40	10	0	0	50	Newly Introduce course	Prof. P. S. Patil
39	No Course in 180s												MA4105	Introduction to E-Commerce	2	0	0	2	40	10	0	0	50	Newly Introduce course	Prof. P. S. Patil
LEVEL-4(C) Applied Technology Courses													LEVEL-4(C) Applied Technology Courses												
40	DD285	History of Fashion-I	3	0	0	3	40	10	0	0	50	100	DD-4104	Appreciation of Indian Costumes	4	2	0	6	80	20	50	50	200	Not Equivalent	Prof. P. S. Patil
	DD286	Textile of India	3	0	0	3	40	10	0	0	50	100													
41	DD482	History of Fashion-II	3	0	0	3	40	10	0	0	50	100	DD-4105	Appreciation of World Costumes	4	2	0	6	80	20	50	50	200	80% Equivalent	Prof. P. S. Patil
42	DD486	Portfolio Development	1	4	5	0	0	0	100	0	100	200	DD-4106	Portfolio Development	0	4	0	4	0	0	100	50	150	85% Equivalent	Prof. P. S. Patil
43	DD483	Digital Design Studio	2	6	0	8	0	0	50	0	100	150	DD-4107	Digital Design Studio	0	4	0	4	0	0	50	50	100	80% Equivalent	Prof. P. S. Patil
44	DD383	Surface Ormamentation Techniques	2	4	0	6	0	0	100	0	50	150	DD4108	Surface Techniques	4	4	0	8	80	20	50	50	200	80% Equivalent	Prof. P. S. Patil
45	DD484	Embroideries of India	4	4	0	8	80	20	50	0	50	200	DD-4109	Draping Techniques	3	6	0	9	40	10	50	50	150	Not Equivalent	Prof. P. S. Patil
46	DD288	Fundamentals of Draping	1	2	0	3	0	0	50	0	50	100													
LEVEL - V DIVERSIFIED COURSES													LEVEL - V DIVERSIFIED COURSES												
47	DD583	Retail Promotion	4	2	0	6	80	20	0	0	0	100	DD5101	Retail Merchandising	4	2	0	6	80	20	25	25	150	Not Equivalent	Prof. P. S. Patil
48	DD581	Fashion Forecasting	4	0	0	4	80	20	0	0	0	100	DD5102	Fashion Forecasting	4	2	0	6	80	20	25	25	150	Not Equivalent	Prof. P. S. Patil
49	No Course in 180s												DD5103	Fashion Communication	4	2	0	6	80	20	25	25	150	Newly Introduced	Prof. P. S. Patil
50	No Course in 180s												DD5104	Technology of Knit	4	2	0	6	80	20	25	25	150	Newly Introduced	Prof. P. S. Patil
51	DD582	Apparel Quality Management	4	0	0	4	80	20	0	0	0	100	DD5105	Quality Standards in Apparel Manufacturing	4	2	0	6	80	20	25	25	150	Not Equivalent	Prof. P. S. Patil
52	MA488	Apparel Management	3	0	0	3	80	20	0	0	0	100	DD5106	Apparel Management	4	2	0	6	80	20	25	25	150	Not Equivalent	Prof. P. S. Patil

N.V. Gondane

Ms. N.V. Gondane
(Department CDC In-charge)

V. G. Tambe

Mr. V. G. Tambe
(Head of Department)

A.S. Zanzure

Mr. A.S. Zanzure
(Institute CDC In-charge)



Government Polytechnic, Pune
(An Autonomous Institute of Government of Maharashtra)
University Road, Pune 16 (www.gppune.ac.in)

Department of Dress Designing and Garment Manufacturing

INDUSTRY QUESTIONNAIRE

Dear friend,

We are conducting a survey to identify the skills needed at the *entry level* by students to work efficiently and effectively in the industry. Your experience in the industry and your valuable time of 10-15 minutes to respond to this short survey will greatly help to develop a competent diploma curriculum to enhance their employability and match the industry need.

General Information

S.No.	Particulars	Information				
1	Name of Industry					
2	Type of Industry – small, medium or large					
3	Product(s) /Service(s) of the Industry					
4	Postal Address					
5	Telephone Numbers					
6	Website					
7	Contact Person: (Name, Designation, E-mail, Mobile/Contact No.)					
8	In your industry, Diploma in <i>Dress Designing & Garment Manufacture</i> are involved to what extent in the following activities?	Please tick (✓) in any one column				
		To a great extent	To a considerable extent	To some extent	Very rarely	
		a) Drafting & Pattern making				
		b) Production				
		c) Designing				
		d) Embroidery & Surface ornamentation				
		e) Marketing				
		f) Materials Management				
		g) Research/Design/Development				
h) Computer Aided designing						

i) Quality Control

Competencies Required of Diploma in Dress Designing & Garment Manufacturing

S. No.	Skills (i.e. What diploma holders will do in the industry at entry level) <u>Legends:</u> Most essential (ME), Essential (E), Desirable (D), Not Required (NR)	Tick (✓) in one column			
		ME	E	D	NR
<u>Behavioural Skills</u>					
1	Use relevant soft skills such as team work, leadership, time management, decision making, planning, conflict resolutions, counseling and others, effectively in different situations.				
2	Develop life-long learning skills through learning-to-learn strategies.				
3	Follow safe practices in production, operation and maintenance.				
4	Communicate to higher authorities and subordinate				
5	Respond positively in all circumstances				
6	Demonstrate ideas ,innovative thoughts and experiences				
7	Negotiate a fruitful outcome in an interaction				
8	Acknowledge mistakes ,misunderstanding, errors etc				
9	Motivate others for achieving desired goals				
<u>Generic Skills</u>					
1	Communicate in English in oral and written form.				
2	Use relevant management principles in industry.				
3	Plan to establish 'start-ups' or 'small manufacture unit'				
5	Apply Quality principles for assuring quality of products and services.				
6	Use computers for word processing & presentations.				
<u>Technical Skills</u>					
1	Draw objects using guidelines.				
2	Use basic hand and machine stitches.				
3	Gain the knowledge of basic pattern making.				
4	Use different manufacturing machines for garment manufacturing.				

S. No.	Skills (i.e. What diploma holders will do in the industry at entry level) Legends: Most essential (ME), Essential (E), Desirable (D), Not Required (NR)	Tick (✓) in one column			
		ME	E	D	NR
5	Achieve the knowledge of fiber, physical and chemical properties of textile material.				
6	Embroider the basic stitches and incorporate these stitches into design.				
7	Draw silhouette & human body proportionately.				
8	Incorporate different seams and finishing techniques to create garments.				
9	Create contemporary versions based on world costumes.				
10	Identify traditional color, motifs, threads & contemporary versions of Indian textiles.				
11	Design innovative and useful accessories.				
12	Drape the patterns to create new design /style				
13	Prepare effective presentation by using Corel Draw and Photoshop				
14	Make articles' by using different ornamentation techniques.				
15	Construct Indo-Western garments.				
16	Develop western outfits.				
17	Illustrate wardrobe collection with accessories and background..				
18	Determine the knowledge of weaving process with looms.				
19	Recognize woven , knitted fabrics and different types of prints.				
20	Classify the process, the structure, the technological environment of apparel industry.				
21	Develop research work to solve the challenges in the society.				
22	Use tools of textile and fashion designing studio.				
23	Embellish articles through Indian regional embroidery				
24	Differentiate marketing and merchandising concepts in industry.				
25	Develop client based portfolio.				
26	Manufacture different pattern for men's wear.				
27	Predict the basics of Fashion trends.				
28	Apply quality standards for garment making.				

S. No.	Skills (i.e. What diploma holders will do in the industry at entry level) Legends: Most essential (ME), Essential (E), Desirable (D), Not Required (NR)	Tick (X) in one column			
		ME	E	D	NR
29	Analyze the concept of retail promotion				
30	Make up creative fashion presentations for couture garment..				
31	Study fundamentals for media advertising.				
32	Perceive impact of century fashion on modern era.				
33	Learning systematic approach towards design & art appreciation				

Government Polytechnic, Pune
Department of Dress Designing and Garment Manufacturing

Validation of 180 OB curriculum by Industry / Engineering Institute/ Research Institute
Course Details

Name of Program: Diploma in Dress Designing and Garment Manufacturing

Name of the Course: -----

Course code :-----

Course offered to: - First year/Second year/Third year

Validator information

Name of the validator:- _____

Designation of the validator:- -----

Name of the organisation: _____

Please mention the Field /s of Expertise:-

Email :- _____ Mobile No: _____

Validator report

S.No	Parameters	Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Needs Improvement(1)
1	The design of the competency expected from the student.					
	The design of course outcomes					
2	Inclusion of Technological Skills					
3	Inclusion of Behavioural Skills					
4	Inclusion of Employability skills					
5	The extent of mapping the list of practicals(practical outcomes) with the course outcomes.					
6	Inclusion of content on socially relevant topics					

Any other suggestion for improvement: _____

Date

Seal of Organization

Signature of Validator

Format for the letter of introduction

Government Polytechnic, Pune

To,

Subject: - Validation of 180 OB curriculum from stake holders

Dear Sir/Madam

This autonomous institute is catering to the technical (diploma) education system since 1994, under academic autonomy. Recently institute has developed 180 outcome based (180 OB) curriculum for all the eight programmes as below .

S. No	Programme
1	Diploma in Civil Engineering
2	Diploma in Electrical Engineering
3	Diploma in Electronics and Telecommunication Engineering
4	Diploma in Mechanical Engineering
5	Diploma in Metallurgy
6	Diploma in Computer Engineering
7	Diploma in Information technology
8	Diploma in DDGM

As a part of curriculum development process, validation of class declaration course from industry is an important step for further improvement. Hence you are kindly requested to fill the validation report attached here with. We would appreciate if this validation report reaches on or before ____ _____. Please send this report on the following email id.-----

Thanks & Regards

HOD,(Program name)

Enclosed- 1) Copy of the curriculum(along with the details of the necessary prerequisites,if any)

2) validation report

III – List of Industries visited/contacted for

Identifying Industry Needs

SR. NO.	NAME OF INDUSTRY
01	Peppermint clothing Co. Ltd ,Pune
02	Kalyani Clothing Co.Ltd ,Pune
03	Amsted clothing Co. Ltd ,Pune
04	Fine trade Garment,Pune
05	Brintons Carpets
06	Trex ,clothing Pvt.Ltd Pune
07	Mahalaxmi tex clothing Pvt.Ltd, Ichalkaranji
08	Grasim industries Ltd, Kagal, Kolhapur
09	Cotton King Pvt. Ltd. Industry Baramati Textile park,Baramati
10	Ramond Luxary cotton Ltd.Kolhapur
11	GangaAcrowoolsLtd.
12	Sangamner foundation, Sangamner
13	Sourcing the souled store Bhumi world industrial park, Bhiwandi -421308
14	Supreme Nonwoven Industry Pvt.Ltd. Bhilad Tal:Umergao Dist: Valsad
15	Weavetex Group of exporters
16	Indoco Jeans Pvt. Ltd.
17	UzaziPvt.Ltd. Sadashiv peth, Pune
18	Rare&basics India Pvt.Ltd. Banglore
19	Krupali clothing Pvt.Ltd. Pune
20	Nyka fashion for womens wear
21	Mafatlal IndustriesLtd. Solapur
22	Jhelum fashion house, Baner, Pune

LIST OF INDUSTRY PERSON FOR 180 OB CURRICULUM VALIDATION

SR. NO.	NAME OF INDUSTRY PERSON	DEGIGNATION	NAME OF INDUSTRY AND ADDRESS
01	Mrs Priyanka Dikhat	Owner of Sew in style Boutique	Sew in Style Boutique
02	Mr. Sharad Kalyani	Owner of Kalyani Clothing,Pune	Kalyani Clothing Co.Ltd ,Pune
04	Ms. Arati Bawiskar	Proprietor of Fine Trade Garments	Fine trade Garment,Pune
05	Ms. Priyanka Pawar	Project Manager middle East and Africa	Brintons Carpets
06	Mr. Shrichand Tejawani	Owner of Trex Sport wear, Pune	Tejawani Brothers
07	Mrs.Swapnil Dinkar Jadhav	Manager	Mahalaxmi tex clothing Pvt.Ltd, Ichalkaranji
08	Mr.Abhijit Kumar Kanire	Shift Supervisor	Grasim industries Ltd, Kagal, Kolhapur
09	Mr. Khandu .B. Gaikwad	General manager , cotton king Pvt. Ltd. Co. , Baramati	Cotton King Pvt. Ltd. Industry Baramati Textile park,Baramati
10	Mr. Vishwanath Devkare	Executive in fabric designing	Ramond Luxury cotton Ltd.Kolhapur
11	Mr. Amar Bhosale	QA manager	GangaAcrowoolsLtd.
12	Mrs.Arati Deshmukh	Owner of Sangamner foundation, Sangamner	Sangamner foundation, Sangamner
13	Ms.Prapti D. Mahajan	Assistant manager	Sourcing the souled store Bhumi world industrial park, Bhiwandi -421308
14	Mrs. Swapneel D.Pokale	Senior Engineer	Supreme Nonwoven Industry Pvt.Ltd. Bhilad Tal:Umergao Dist: Valsad
15	Mr.Ashok Mote	QA Manager	Weavetex Group of exporters
16	Ms. Sayali H. Bagul	Merchandiser	Indoco Jeans Pvt. Ltd.
17	Mrs. Minal Joshi	Owner of A.V.clothing pvt Ltd, Pune	UzaziPvt.Ltd. Sadashiv peth, Pune
18	Mr. Kisan Kadam	Mens wear designer	Rare&basics India Pvt.Ltd. Banglore
19	Mr.Ramesh Bandi	Owner of Kripali clothing pvt Ltd, Pune	Krupali clothing Pvt.Ltd. Pune
20	Mrs. Trupti Dhane	Fashion buyer in Nyka fashion	Nyka fashion for womens wear
21	Ms. Megha Jakate	Merchandiser	Mafatlal IndustriesLtd. Solapur
22	Mrs. Aarti Rele	Owner of Jhelum fashion house	Jhelum fashion house, Baner, Pune