

Program Name : Diploma in Dress Designing & Garment Manufacturing

Program Code : DD

Semester : First

Course Title : Techniques of Pattern Making & CAD

Course Code : 24103

1. RATIONALE :

Pattern making is the heart of garment industry. The student should be able to develop pattern by following relevant process. Knowledge on human figure types and creation of pattern for customers plays vital role in fashion industry. Skills in pattern making by manipulating the basic pattern are to be developed in students through this course. Student should be able to apply the technique of draping, digital drafting and grading. Students should develop commercial pattern from the basic pattern.

2. COMPETENCY :

The aim of this course is to help the student to attain the industry identified competency through various teaching learning methods.

- **Create patterns for garments using different methods.**

3. COURSE OUTCOMES (Cos) :

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

1. Drape bodice block with single dart.
2. Drape bodice block with two dart.
3. Develop basic bodice block with single and two dart series using CAD.
4. Develop patterns for various garment components using CAD.
5. Develop advance patterns manually incorporating different components of garments.

4. TEACHING AND EXAMINATION SCHEME :

Teaching Scheme			Credit (L+T+P)	Examination Scheme												
L	T	P		Theory						Practical						
				Paper Hrs.	ESE		PA		Total		ESE		PA		Total	
				Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
2	--	2	4	2	35	14	15*	00	50	20	50@	20	50	20	100	40

**:10 marks of theory PA is for micro-project assessment to facilitate attainment of COs and the remaining 10 marks for tests and assignments given by the teacher.*

Legends: L-Lecture; T – Tutorial/Teacher Guided Theory Practice; P - Practical; C- Credit, ESE - End Semester Examination; PA - Progressive Assessment

5. COURSE MAP : (with sample COs, Learning Outcomes i.e. LOs and topics)

This course map illustrates an overview of the flow and linkages of the topics at various levels of outcomes (details in subsequent sections) to be attained by the student by the end of the course, in all domains of learning in terms of the industry/employer identified competency depicted at the centre of this map.



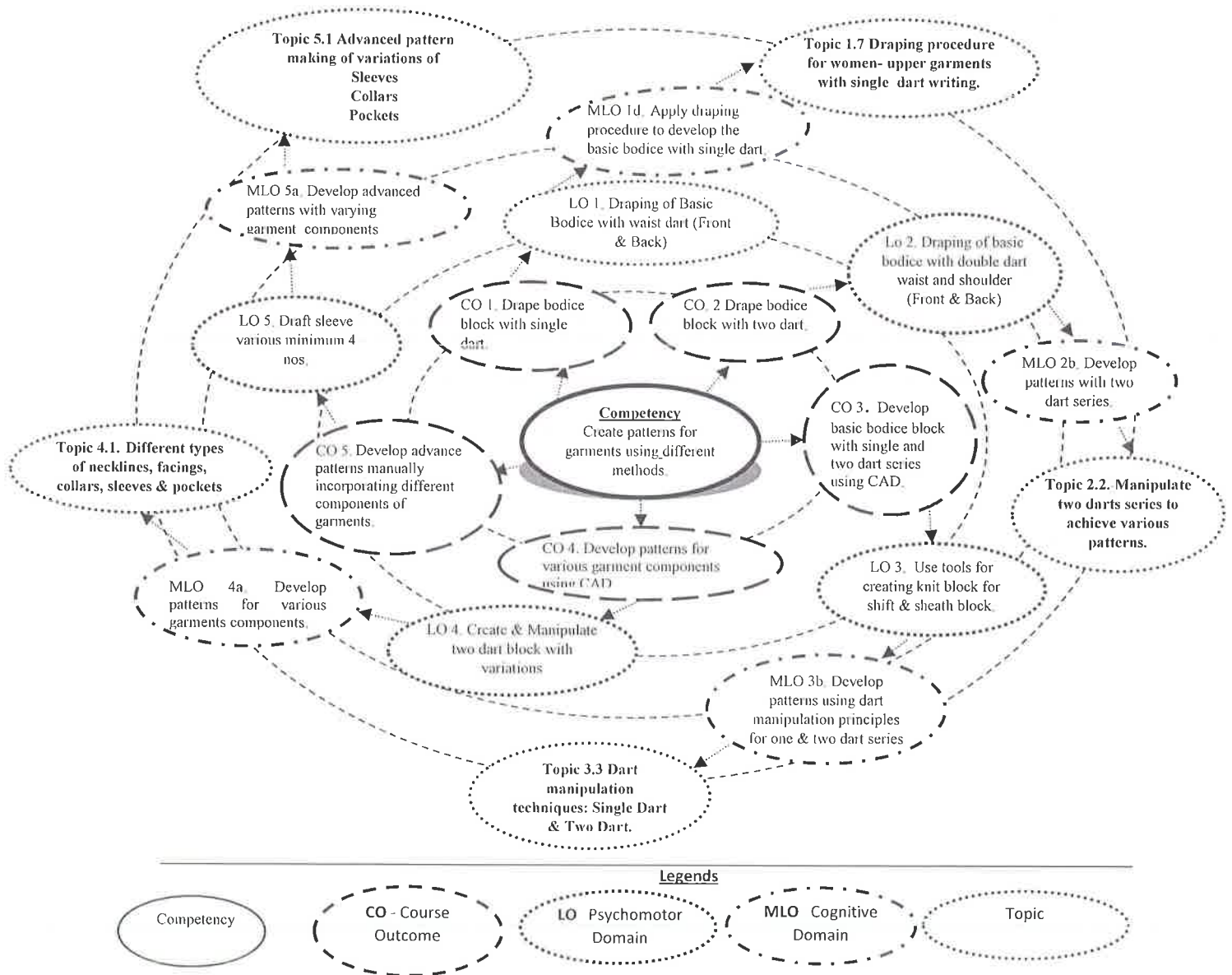


Figure 1 - Course Map

6. SUGGESTED PRACTICALS / EXERCISES :

The practicals /exercises in this section are psychomotor domain LOs (i.e. sub components of the Cos) are to be developed and assessed so the students can attain the competency.

Sr. No.	Practical Exercises Learning Out comes in Psychomotor Domain	Unit No.	App. Hrs. required
	DRAPING :		
1.	Record suitable measurements from body, given dummy or size chart for a given pattern.	I	2 hrs.
2.	Demonstrate pattern making tools and symbols. Preparation of Dress Form for draping.	I	2 hrs.
3.	Draping of Basic Bodice with waist dart (Front & Back)	I	2 hrs.
4.	Marking & transferring toile to flat pattern	I	2 hrs.
5.	Draping of basic bodice with double dart waist and shoulder (Front & Back)	II	2 hrs.
6.	Dart manipulation to two Dart series	II	2 hrs.



7.	Marking & transferring toile to flat pattern	II	2 hrs.
	CAD MANUAL FLAT PATTERN:		
8.	Use tools for creating knit block for shift & sheath block	III	2 hrs.
9.	Use of Tools for basic bodice block (close & easy fitting)	III	2 hrs.
10.	Manipulate single waist line dart to neckline, armcye, centre front & French dart	IV	2 hrs.
11.	Create & Manipulate two dart block with variations.	IV	2 hrs.
12.	Create various necklines and facing with seam allowance on basic block	IV	2 hrs.
13.	Create basic sleeve (Full & Half Length)	IV	2 hrs.
14.	Draft sleeve various minimum 4 nos.	V	2 hrs.
15.	Draft collar variations minimum 4 nos.	V	2 hrs.
16.	Draft placket and pocket variations minimum 4 nos.	V	2 hrs.
	Total :		32 hrs

Note :

To attain the COs and competency, a judicious mix from the above listed LOs need to be performed to achieve up to the 'Precision Level' of Dave's 'Psychomotor Domain Taxonomy'. Assessment of the 'Process' and 'Product' related skills in the laboratory / workshop/field work should be done as per suggested sample below:

Sr. No.	Performance Indicators	Weightage in %
1	Use of CAD for pattern making	35
2	Follow the drafting & draping principles correctly.	35
3	Indicate the symbols and landmarks in pattern drafting - manual.	20
4	Timely and neat submissions of patterns.	10
5	Submit created patterns in time.	-
	Total :	100

The above PrOs also comprise of the following social skills/attitudes which are Affective Domain Outcomes (ADOs) that are the best developed through the laboratory/field based experiences:

- a. Follow safety practices.
- b. Practice good housekeeping.
- c. Practice energy conservation.
- d. Demonstrate working as a leader/a team member.
- e. Maintain tools and equipment.
- f. Follow ethical Practices.

The ADOs are not specific to any one PrO, but are embedded in many PrOs. Hence, the acquisition of the ADOs take place gradually in the student when s/he undertakes a series of practical experiences over a period of time. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

- 'Valuing Level' in 1st year
- 'Organising Level' in 2nd year
- 'Characterising Level' in 3rd year.



7. MAJOR EQUIPMENT / INSTRUMENTS REQUIRED :

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

Sr. No.	Equipment Name with Broad Specifications	Experiment Sr. No.
1.	Standard dummies	1 to 7
2.	CAD with plotter.	8 to 13
3.	Stationary material such as pencil, eraser, scale, Brown Paper Drafting Book (Journal)	1 to 7 14 to 16
4.	Measuring Tools – Scale Triangle, measuring tape, flexi tape, French curve. Tracing Tools – Tailors Chalk Tracing paper, Carbon Paper, Tracing wheel. Cutting Tools – Scissors, Shears, Pinking Shears	1 to 7 14 to 16

8. UNDERPINNING THEORY COMPONENTS

The following topics / subtopics should be taught and assessed in order to develop Los in cognitive domain for achieving the Cos to attain the identified competency.

Unit	Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub – topics
Unit –I Draping & Flat pattern development of bodice with single dart	1a. Make use of draping principles for women's basic bodice 1b. Identify the given tools for draping 1c. Select relevant draping material 1d. Apply draping procedure to develop the basic bodice with single dart. 1e. Develop a flat pattern using the toile 1f. Develop flat pattern of basic bodice manually	1.1 Introduction to draping 1.2 Draping terminology 1.3 Tools used for draping 1.4 Dress forms and its parts 1.5 Principles of draping 1.6 Draping material- selection and preparation 1.7 Draping procedure for women-upper garments with single dart. 1.8 Transfer of toile to flat pattern 1.9 Develop Flat pattern of basic bodice manually
Unit– II Draping & Flat Pattern with two dart series	2a. Develop basic two dart bodice/ 2b. Develop patterns with two dart series. 2c. Develop flat patterns using the toile. 2d. Develop flat pattern of basic two dart bodice manually	2.1 Draping procedure bodice using two dart. 2.2 Manipulate two darts series to achieve various patterns. 2.3 Mark and transfer toile to flat pattern. 2.4 Develop Flat pattern of bodice with 2 darts manually
Unit– III CAD	3a. Apply tools to create a basic women's wear bodice block 3b. Develop patterns using dart manipulation principles for one & two dart series	3.1 Introduction to CAD 3.2 Tools to create a basic bodice Block. 3.3 Dart manipulation techniques: Single Dart & Two Dart.



Unit– IV Pattern Development with CAD	4a. Develop patterns for various garments components	4.1 Different types of necklines, facings, collars, sleeves & pockets
Unit– V Manual Drafting	5a. Develop advanced patterns with varying garment components	5.1 Advanced pattern making of variations of Sleeves Collars Pockets

9. 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	Draping with single dart	04	-	02	-	02
II	Draping with two dart series	04	02	02	-	04
III	CAD	04	02	02	-	04
IV	Pattern Development with CAD	04	02	04	-	06
V	Manual Drafting	16	-	03	16	19
Total		32	06	13	16	35

Legends: R=Remember, U=Understand, A=Apply and above (Bloom's Revised taxonomy)

Note: This specification table provides general guidelines to assist student for their learning and to teachers to teach and assess with respect to attainment of LOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary from above table.

10. 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 students) portfolio which will be useful for their placement interviews:

- Students have to maintain a journal for documentation of pattern making with various method.
- Compile a picture gallery of draping exercises.
- Students should subscribe to rented portal of CAD for practicing the software.
- Maintain the hard and soft copy of CAD patterns.

11. 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.



- b. Different types of teaching methods and media that are to be employed to develop the outcomes.
- 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. Teachers need to ensure to create opportunities and provisions for co – curricular activities.
- e. Guide students in undertaking micro-projects.

12. 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 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 to 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.

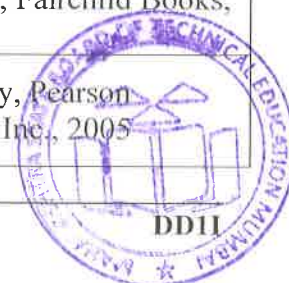
The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual 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-project are given here. Similar micro-projects could be added by the concerned faculty:

- a. **Classification of human figures:** Create innovative patterns using bodice and dress block combined with other garment Components, Sleeves, Collars and necklines etc.
- b. **Picture Collection:** Collect pictures of five female upper garments and analyse innovations required on bast block to achieve the pattern.

13. SUGGESTED LEARNING RESOURCES :

Sr. No.	Title of Book	Author	Publication
1	Patternmaking For Fashion Design	Joseph-Armstrong, Helen	New Delhi, Pearson India Education Services Pvt. Ltd., 2016
2	Metric Pattern Cutting For Women's Wear	Aldrich, Winifred	Uk, Blackwell Publishing, 2008
3	The Art Of Fashion Draping	Amaden-Crawford, Connie	New Delhi, Om Books International, 2005
4	Draping Basics	Di Marco, Sally M.	New York, Fairchild Books, 2010
5	Draping For Fashion Design	Jaffe, Hilde Relis, Nurie Torre, Rosemary -	New Jersey, Pearson Education Inc., 2005



		Illustrator	
6	Zarapkar System of Cutting	Zarapkar K.R.	Sale Publishers, Bombay ISBN: 9788124301999
7	Pattern Cutting Made Easy	Gillian Holman	Balckwell Science Ltd., London ISBN: 9781849940733
8	More Dress Pattern Designing	Natalie Bray	Balckwell Science Ltd., London ISBN: 9780632065028

14. SUGGESTED SOFTWARE / LEARNING WEBSITES

- a. <https://www.sewingworkshop.com/>
- b. <https://m.createandcraft.com>
- c. <https://www.skillshare.com>
- d. <http://www.sewcountrychick.com>
- e. <https://www.textileflowchart.com>
- f. <https://tukatech.com>
- g. www.creativebug.com/classseries/single/dartmanipulation?https://www.fibertofashion.com
- h. Isntthatsew.org/dart-manipulation/
- i. www.youtude.com/watch?v=VAttkI18MjkU
- j. www.clothingpatterns101.com/pattern-drafting.html
- k. www.slideshare.net/thyrinc/dart-manupulation
- l. www.gradehouse.co.uk/what-is-pattern-grading/
- m. www.clothingpattern101.com/pattern-grading.html
- n. www.designersnexus.com/fashion-design-industry-information/what-is-fashion-draping/
- o. Style2designer.com/apparel/draping-mannequin/what-is-draping-technique-and-its-process/
- p. www.universityoffashion.com/disciplines/draping/



