



Course Syllabus
Gyanmanjari Institute of Design
Semester-4

Subject: Digital Pattern Making and Grading- DDEFN14216

Type of course: Ability Enhancement Courses (AEC)

Prerequisite: Students should have basic knowledge of manual pattern making and garment construction. Basic computer skills are required. Prior exposure to Adobe Illustrator or CAD tools is helpful but not mandatory.

Rationale: This course introduces students to computer-aided pattern making, digital drafting, and grading techniques using industry-oriented software such as TUKA CAD, Optitex, Gerber AccuMark, or Illustrator for patterns. Students will learn how to convert manual patterns to digital form, modify, grade, and prepare production-ready files. This course bridges manual and digital workflows, ensuring students are industry-ready.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks					Total Marks
CI	T	P		Theory Marks		Practical Marks		CA	
			ESE	MSE	V	P	ALA		
0	2	4	4	00	00	10	40	50	100

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Sr. no.	Course content
1	Unit –1 Introduction to Digital Pattern Making 1.1 Importance of CAD in fashion industry 1.2 Overview of CAD systems (Gerber / Optitex / TUKA / Illustrator) 1.3 Understanding digital workspace, file formats & tools



2	<p>Unit -2 Digital Drafting Tools & Techniques</p> <p>2.1 Drawing tools: lines, curves, point editing 2.2 Adding seam allowance, notches, grainlines, drill marks 2.3 Creating basic blocks A. Bodice block B. Sleeve block C. Skirt block</p>
3	<p>Unit - 3 Digital Pattern Development</p> <p>3.1 Style modification (dart manipulation, yokes, panels) 3.2 Adding fullness: gathers, pleats, flare, godets 3.3 Creating garment patterns: A. Tops B. Dresses C. Trousers D. Kids wear basics</p>
4	<p>Unit- 4 Grading Techniques</p> <p>4.1 Introduction to size charts & measurements 4.2 Digital grading rules (X/Y movements) 4.3 Grading women’s wear 4.4 Grading kids wear 4.5 Preparing graded nests</p>
5	<p>Unit-5 Marker Making & Production Files</p> <p>5.1 Marker efficiency & fabric saving 5.2 Auto-marker generation 5.3 Exporting pattern files for production 5.4 Preparing print-ready PDF</p>

Continuous Assessment:

Sr. No.	Active Learning Activities	Marks
1	Create Digital Basic Blocks(bodice/sleeve/skirt)	10
2	Style Development using digital tools (princess line, panels, darts)	10
3	Grade a Pattern into 3-5 sizes	10
5	Make a Marker Layout and show fabric efficiency	10
4	Final Digital Pattern Collection (2-3 garments with grading)	10
Total		50



Suggested Specification table with Marks (Theory): NA

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance(R)	Understanding(U)	Application(A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	NA	NA	NA	NA	NA	NA

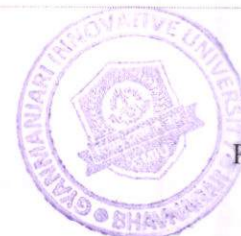
Note: This specification table shall be treated as a general guideline for students and teachers.
The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Understand the role and functionality of digital pattern-making tools.
CO2	Create digital basic blocks and modify them for various designs.
CO3	Apply accurate grading techniques for multiple size ranges.
CO4	Prepare markers and production-ready files for industry use.
CO5	Develop complete garment patterns digitally with efficiency.

List of Practical

Sr. No	Description	Unit No	Hrs.
1	Explore and identify all CAD tools & workspace	1	4
2	Trace and digitize a manual pattern using digital tools	1	3
3	Add grainline, notches & seam allowance to practice pattern	1	3
4	Create digital bodice block	2	4
5	Create digital sleeve block	2	4
6	Draft skirt block digitally	2	4
7	Apply seam allowance, labels & drill marks	2	2
8	Digital Dart manipulation & style lines (princess line)	3	4
9	Create A-line dress/Top with yoke or panels	3	4
10	Add fullness: gathers, pleats, flare	3	3
11	Pattern finalization & checking fit digitally	3	3
12	Grading rule creation (X/Y movements)	4	3



13	Grade bodice block into 3–5 sizes	4	3
14	Grade sleeve or skirt	4	2
15	Create graded nest & check accuracy	4	2
16	Create marker for bodice/skirt & calculate efficiency	5	4
17	Prepare production-ready pattern set (PDF + CAD file)	5	4
18	Theme-based final garment pattern (2–3 garments)	5	4
Total			60

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- [1] Patternmaking for Fashion Design– Helen Joseph Armstrong
- [2] Metric Pattern Cutting– Winifred Aldrich
- [3] Computer-Aided Pattern Design & Product Development– Winifred Aldrich
- [4] Digital Pattern Drafting Using Adobe Illustrator– Robin Schneider
- [5] Apparel Computer-Aided Design (CAD) – Gerry Cooklin

