

**GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)**

**Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)**

I – Semester

Course Title: **Design Fundamental**

(Course Code: 4315101)

Diploma programme in which this course is offered	Semester in which offered
Computer Aided Costume Design and Dress Making	First

**1. RATIONALE**

This course is designed to develop artistic aptitude in students to sustain themselves in the field of garment/fashion design. It helps in developing the basic foundation that is essential for costume design and dressmaking. The course also forms the basis for drawing proportionate human figures. Application of principles of design will be useful to the students in garment designing. In addition, the knowledge of different types of figures enables the designers to design costumes as per figure types.

**2. COMPETENCY**

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

- **Apply principles of design in garments for different types of human figures using appropriate elements of design.**

**3. COURSE OUTCOMES (COs)**

The practical exercises, the underpinning knowledge and the relevant soft skills associated with the identified competency are to be developed in the student for the following Course Outcomes (COs) achievement :

- Use tools and materials for drawing and sketching.
- Create drawings and sketches using appropriate tools and elements of design.
- Apply principles of design in clothing using appropriate elements of design.
- Draw human figure proportionally.
- Design dress for various types of human figures.

**4. TEACHING AND EXAMINATION SCHEME**

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	CA	ESE	CA	ESE	
3	0	4	5	30*	70	25	25	150

(\*):Out of 30 marks under the theory CA, 10 marks are for assessment of the micro-project to facilitate integration of COs and the remaining 20 marks is the average of 2 tests to be taken during the semester for assessing the attainment of the cognitive domain UOs required for the attainment of the COs.

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

## 5. SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) are the sub-components of the COs. *Some of the PrOs marked “\*” are compulsory, as they are crucial for that particular CO at the ‘Precision Level’ of Dave’s Taxonomy related to ‘Psychomotor Domain’.*

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Draw effects of different types of lines on the garment (Types as per the theory portion.)	II	02*
2	<b>Shape</b> <b>2.1 Draw the following equal-sided flat shapes.</b> 2.1.1 Square 2.1.2 Circle 2.1.3 Equilateral Triangle 2.1.4 Pentagon 2.1.5 Hexagon 2.1.6 Octagon	II	02*
	<b>2.2 Draw the following Unequal sided flat shapes</b> 2.2.1 Rectangle 2.2.2 Parallelogram 2.2.3 Heart 2.2.4 Diamond 2.2.5 Teardrop 2.2.6 Marquis 2.2.7 Ogive 2.2.8 Star 2.2.9 Paisley 2.2.10 Club 2.2.11 Spade 2.2.12 Pear 2.2.13 Kidney	II	02*
3	<b>Form</b> <b>3.1 Draw the following Equal sided three-dimensional forms.</b> 3.1.1 Sphere 3.1.2 Cube <b>3.2 Draw the following Unequal sided three-dimensional forms.</b> 3.1.1 Cylinder 3.1.2 Cone 3.1.3 Pyramid 3.1.4 Box 3.1.5 Bell 3.1.6 Dome 3.1.7 Ovoid 3.1.8 Barrel 3.1.9 Hourglass 3.1.10 Trumpet	II	04*
4	<b>Colour.</b> 4.1 Create colour wheel.	II	02*
	4.2 Create tints, shades and tones.	II	02*

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
	4.3 Create colour schemes with reference to theory.	II	04*
5	Reduce and Enlarge any one design.	II	02
6	Draw Structural and Applied design.	II	04*
7	<b>Principles of design</b> <b>7.1 Draw the effect of Balance in clothing in the following areas</b> 7.1.1 Balance inline path 7.1.2 Balance in space 7.1.3 Balance in space & shape 7.1.4 Balance in value 7.1.5 Balance in texture 7.1.6 Balance in pattern	III	04*
	<b>7.2 Draw the effect of Emphasis in clothing in relation to the elements of design</b> 7.2.1 Emphasis of line thickness 7.2.2 Emphasis of shape 7.2.3 Emphasis of form 7.2.4 Emphasis of space 7.2.5 Emphasis of light 7.2.6 Emphasis of texture 7.2.7 Emphasis of pattern	III	04*
	<b>7.3 Draw the effect of Rhythm in clothing and its relationship with elements of design</b> 7.3.1 Rhythm in line – Wavy, Zigzag, Single, Swirled, Jagged. 7.3.2 Rhythm in shape – Saw tooth, Diamond, Undulating. 7.3.3 Rhythm in pattern	III	04*
	<b>7.4 Draw the effect of Radiation in clothing in relation to elements of design</b> 7.4.1 Radiation in line & space 7.4.2 Radiation in shape & space 7.4.3 Radiation in Pattern 7.4.4 Radiation from an axis	III	04*
	<b>7.5 Draw the effect of Transition in clothing in relation to elements of design</b> 7.5.1 Transition in line 7.5.2 Transition in space 7.5.3 Transition in space & shape 7.5.4 Transition in texture 7.5.5 Transition in shape & texture	III	04*

Sr. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
	<b>7.6 Draw the effect of Gradation in clothing in relation to elements of design</b> 7.6.1 Gradation in line 7.6.2 Gradation in space 7.6.3 Gradation in shape 7.6.4 Gradation in space & shape 7.6.5 Gradation in texture 7.6.6 Gradation in pattern	III	04*
	<b>7.7 Draw the effect of Repetition in clothing in relation to elements of design</b> 7.7.1 Repetition in line 7.7.2 Repetition in space 7.7.3 Repetition in shape 7.7.4 Repetition in pattern 7.7.5 Repetition in texture	III	04*
8	Sketch proportionate human figures of male, female and child	IV	04*
	<b>Total</b>		<b>56</b>

**Note**

- i. More **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list.
- ii. The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course, which are embedded in the COs and ultimately the competency.

Sr. No.	Sample Performance Indicators for the PrOs	Weightage in %
1	Prepare a plan for drawing/sketch after analysis of given task	20
2	Create the drawings as per laid down procedure	50
3	Finishing of the final design	20
4	Presentation of the drawing/sketch	10
	<b>Total</b>	<b>100</b>

**6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED**

These major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practicals in all institutions across the state.

Sr. No.	Equipment Name with Broad Specifications	PrO. No.
1	<b>Not Applicable</b>	----

## 7. AFFECTIVE DOMAIN OUTCOMES

The following **sample** Affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs and PrOs. More could be added to fulfill the development of this course competency.

- a) Work as a leader/a team member.
- b) Follow ethical practices.
- c) Practice environmental friendly methods and processes. (Environment related)**

The ADOs are best developed through the laboratory/field-based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

- i. 'Valuing Level' in 1<sup>st</sup> year
- ii. 'Organization Level' in 2<sup>nd</sup> year.
- iii. 'Characterization Level' in 3<sup>rd</sup> year.

## 8. UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of Revised Bloom's taxonomy that are formulated for development of the COs and competency. If required, more such UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different level)	Topics and Sub-topics
<b>Unit I</b>  <b>Basics of drawing tools and materials</b>	1a. Identify tools and materials used for drawing and sketching 1b. Explain the function of different drawing and sketching tools 1c. Use tools and materials appropriately for drawing and sketching	1.1 Drawing and sketching tools such as Pencil, Pen, Ink pen, Pencil colours, Sketch pen, Felt tip pen, Markers, Polychrome colour, Acrylic colour, Charcoal pencil/chalk, T-square, Set square, French curve. Protector, Scale, Compass, Divider, Water colour. Pastel colour, Brush, Crayon wax etc.  1.2 Drawing and sketching material such as Drawing sheets/paper, Drawing book, Drawing board etc.
<b>Unit II</b>  <b>Elements of design</b>	2a. Develop drawings and sketches using appropriate elements of design 2b. Create colour wheel 2c. Explain various colour schemes 2d. Develop Tints, Shades and tones. 2e. Identify warm and cool colours 2f. Experiment with different types of line 2g. Distinguish between shapes and forms	2.1 Line: Definition of line, Different types of line, Aspects of line, its physical and psychological effects on human figure.(Horizontal, Vertical, Diagonal, Curve, Zigzag)  2.2 Space: Definition of space, Cues influencing perception of shape and space, physical and psychological effect of space.  2.3 Shape and form: Definition, equally sided flat shapes, unequally sided flat shapes, equally sided volume forms, unequally sided forms, some shapes that fit snugly together, shapes not fitting together create other

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different level)	Topics and Sub-topics
	2h. Identify various textures	<p>shapes between them.(With reference to practical.)</p> <p>2.4 Texture: Definition and concept of texture, Types of textures, Psychological and physical effect of Texture.</p> <p>2.5 Colour – Definition, psychological and physical effects of colour, Primary, secondary and tertiary colour. neutral colour. Dimension of colour – Hue, Value &amp; Intensity, Tints, Shades and tones, Warm and Cool colour. Colour scheme – Neutral, Analogous, Monochromatic, Complementary, Double complementary, Split complementary, Double split complementary, Triad colour scheme.</p>
<p><b>Unit III</b></p> <p><b>Principles of design</b></p>	<p>3a. Develop drawings using principles of design</p> <p>3b. Experiment with various principle of design</p> <p>3c. Distinguish between formal and informal balance</p> <p>3d. Create harmony, balance, emphasis, proportion and rhythm by different means</p>	<p>3.1 Harmony-Definition, concept, effects (physical &amp; psychological).</p> <p>3.2 Balance -Definition, concept, types of balance, physical &amp; psychological effects of balance.</p> <p>3.3 Emphasis -Definition, concept, physical &amp; Psychological effects of emphasis.</p> <p>3.4 Proportion-Definition, concept, physical &amp; psychological effects of proportion.</p> <p>3.5 Rhythm- Definition and effects of Rhythm. Different ways of achieving rhythm</p> <p>3.5.1 Repetition-Definition and physical &amp; psychological effects of repetition.</p> <p>3.5.2 Parallelism-Definition and effects of parallelism.</p> <p>3.5.3 Sequence-Definition and effects of Sequence.</p> <p>3.5.4 Alternation- Definition and effects of Alternation.</p> <p>3.5.5 Gradation- Definition and effects of Gradation.</p> <p>3.5.6 Transition- Definition and effects of Transition.</p> <p>3.5.7 Radiation-- Definition and effects of Radiation.</p> <p>3.5.8 Concentricity- Definition and</p>

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different level)	Topics and Sub-topics
		effects of Concentricity. 3.5.9 Contrast -Definition and effects of Contrast.
<b>Unit –IV</b>  <b>Human figure proportions</b>	4a. Explain basic human proportions 4b. Describe eight head theory of male, female and child 4c. Compare human proportion of male, female and child	4.1 Basic Human proportions, eight head theory of male and female, child  4.2 Comparative analysis of Male, Female and child ideal proportions
<b>Unit-V</b>  <b>Pattern design &amp; flattering different types of figures</b>	5a. Identify different type of human figures 5b. Design dress for different type of human figures	5.1 The Stout figure 5.2 The thin figure 5.3 Narrow shoulder 5.4 Broad shoulder 5.5 Round figure 5.7 Large Bust 5.7 Flat chest 5.8 Large Hip 5.9 Large waist & Hips 5.10 Large abdomen 5.11 Long Waist, slender figure 5.12 Short Waist 5.13 Sway Back 5.14 Long Neck 5.15 Short or thick neck

## 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	Tools and materials for drawing and sketching	02	02	02	06	10
II	Elements of design.	10	05	05	10	20
III	Principles of design.	12	05	05	10	20
IV	Human figure proportions	08	02	04	02	08
V	Pattern design & flattering different types of figures	10	02	04	06	12
<b>TOTAL</b>		<b>42</b>	<b>16</b>	<b>20</b>	<b>34</b>	<b>70</b>

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

**Note:** This specification table provides general guidelines to assist students for their learning and to teachers to teach and question paper designers/setters to formulate test items/questions to assess the attainment of the UOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may slightly 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. They also collect/record physical evidences for their (student's) portfolio which may be useful for their placement interviews:

Following is the list of proposed student activities (individual or group-based)

- a. Power point presentation
- b. Internet based assignments
- c. Teacher guided self learning activities
- d. Library/internet/lab based mini-project etc.

## 11. 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. Show video film to demonstrate the elements and principles of Design
- b. Arrange a visit to nearby mall to understand the elements and principles of design in garments.
- c. Show PowerPoint presentation or video film on types of design.
- d. Give a mini project to students like picture collection on different types of design, elements and principles of Design.
- e. **'L' in section No. 4** means different types of teaching methods that are to be employed by teachers to develop the outcomes.
- f. About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the students for **self-learning**, but to be assessed using different assessment methods.

## 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 (group of 3 to 5). However, **in the fifth and sixth semesters**, 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 duration of the microproject should be about **14-16 (fourteen to sixteen) student engagement hours** during the course. The students 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. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:

- a) **Eight head croquis:** Create template of eight head croquis of female with different poses.
- b) **Ten head croquis:** Create template of ten head croquis of female with different poses.



- c) **Twelve head croquis:** Create template of twelve head croquis of female with different poses.
- d) **Sustainable environment:** Draw poster for providing message about Sustainable environment/green technology.
- e) Draw square motif of 1" x 1" inch (approx.) use this motif in different orientations and represent each of the followings:
- In black outline create an overall pattern surface.
  - In black outline create a border of 1 ½" width.
- f) Observe and analyze any selected area and identify the elements of design (point, line, shape and texture) present in it.
- g) Select a colourful picture from a magazine and find out the colour scheme present in it.
- h) Sketch any 1 object four times and apply 4 different colour schemes to each of them.
- i) Observe and analyze the selected natural forms and identify the principles of design (balance, rhythm, emphasis and contrast) present in them.

### 13. SUGGESTED LEARNING RESOURCES

Sr. No.	Title of Book	Author	Publication with place, year and ISBN
1	Marian L Devis	Visual design in dress	PEARSON, USA. 21 February 1996 • ISBN- : 9780131121294 • ISBN-: 9780131121294
2	Mary Kefgan	Individuality in clothing selection and personal appearance	Prentice Hall PTR, 1971, ISBN 13: 9780130358653
3	Hemstead	Colour and line in dress	Lawrance Prantice Hall, 25 March 2012 • ISBN-10 : 1258256517 • ISBN-13 : 1258256517-978
4	Patrick JohnIrcland	Fashion design illustration- Men	5-July 1996, B.T. Batsford Ltd. London, 07134646235
5	Hamlyn	M/c calls' Sewing in colour	Hamlyn 1 January 1971
6	Byrta Carson	How you look and dress?	Mc graw hill book co. 1969 ISBN-13 : 0070101746-978
7	Harriet Goldstein	Art in Everyday Life	The Macmillan Company, 1929

### 14. SOFTWARE/LEARNING WEBSITES

- a. <http://www.purushu.com/2010/08/elements-of-design-in-fashion.html>
- b. <https://www.proprofs.com/quiz-school/story.php?title=elements-principles-design-1>
- c. <https://archive.org/details/artineverydaylif008800mbp>
- d. <http://williamson.agrilife.org/files/2014/09/principleselements.pdf>
- e. <https://ncert.nic.in/textbook/pdf/lehe201.pdf>
- f. [https://www.subhartidde.com/slms/BFA\(F\)%20104%20SE%201%20Principles%20of%20Desi gn.pdf](https://www.subhartidde.com/slms/BFA(F)%20104%20SE%201%20Principles%20of%20Desi gn.pdf)
- g. <https://www.khanacademy.org/humanities/ap-art-history/start-here-apah#elements-of-art-apah>
- h. <http://www.invisionapp.com/design-defined/principles-of-design/>
- i. <http://www.sewguide.com/dress-for-bodyshape/?amp=1>

**15. PO-COMPETENCY-CO MAPPING**

Semester I	Design Fundamental (Course Code: 4315101)						
	POs						
Competency & Course Outcomes	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design/ development of solutions	PO 4 Engineering Tools, Experimentation & Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning
<b>Competency</b>	<b>Apply principles of design in garments for different types of human figures using appropriate elements of design.</b>						
CO a) Use tools and materials for drawing and sketching.	3	-	--	-	-	-	3
CO b) Create drawings and sketches using appropriate elements of design.	3	2	2	2	-	-	3
CO c) Apply principles of design in clothing using appropriate elements of design.	3	2	2	2	2	2	3
CO d) Draw human figure proportionally.	3	-	-	3	-	-	3
CO e) Design dress for various types of human figures.	3	3	3	2	2	2	3

Legend: '3' for high, '2' for medium, '1' for low or '-' for no correlation of each CO with PO

**16. COURSE CURRICULUM DEVELOPMENT COMMITTEE****GTU Resource Persons**

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