



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 1st Semester

Branch: Production Technology

Subject Name: Engineering Drawing

Subject Code: 21110303

With effective
from academic
year 2021-22

Type of course: Engineering Science

Prerequisite: Zeal to learn the subject

Rationale: Engineering Drawing is an effective language of engineers. It is the foundation block which strengthens the engineering & technological structure. Moreover, it is the transmitting link between ideas and realization.

Teaching and Examination Scheme:

Teaching Scheme			Credit C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA(M)	ESE(V)	PA(I)	
3	0	0	3	50	0	0	0	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Content:

Sr. No.	Topic	No. of Hours	% Weightage
01	<p>Engineering Drawing and its Aid.</p> <p>Introduction to Engineering Drawing, Sizes and layout of drawing sheets, Selection of sizes, Title Block, its position and content. Drawing Instruments :- their Standard and uses - Drawing board, T-Square, Drafter (Drafting M/c), Set Squares, Protractor, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), Pencils of different Grades, Drawing pins / Clips</p> <p>Lines : - Definition, types and applications in Drawing as per BIS SP:46-2003, Drawing of parallel lines, perpendicular line, Methods of Division of line segment</p> <p>Dimensioning: Definition, types and methods of dimensioning (functional, nonfunctional and auxiliary) , Position of dimensioning (Unidirectional, Aligned, Chain(Incremental), Parallel(Absolute)), Dimension Elements: (Dimension value, Dimension line, Projection line, Leader line, Termination (arrow head, oblique stroke or dot), Origin Identification (open circle)</p> <p>Scale:- (reduced, enlarged & full size) plain scale and diagonal scale.</p>	8	25
02	<p>Construction of Geometrical Drawing and Solids</p> <p>Different Polygons and their values of included angles Inscribed and Circumscribed polygons, Conic Sections (Ellipse & Parabola)</p> <p>Drawing of Solid figures: Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone and Pyramid with dimensions.</p>	8	15
03	<p>Orthographic Projection</p> <p>Principle of projection, Principal planes of projection, Projections from the pictorial view of the object on the principal planes for View from Front, View from Top and View from Side using first angle projection method and third angle projection method, Full Sectional View.</p>	10	20



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 1st Semester

Branch: Production Technology

Subject Name: Engineering Drawing

Subject Code: 21110303

With effective
from academic
year 2021-22

04	Isometric Projection Isometric Scale, Conversion of orthographic views into isometric projection, isometric view or drawing.	10	20
05	Symbolic representation – different symbols Fastener (Rivets, Bolts and Nuts) Bars and profile sections Weld, Brazed and soldered joints and welding symbols as per ISO 2553 Piping joints and fitting	6	20

Distribution of marks weightage for cognitive level:

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20	20	10	-	-	-

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.

Reference Books:

1. A Text Book of Engineering Graphics by P.J.Shah S.Chand & Company Ltd., New Delhi
2. Elementary Engineering Drawing by N.D.Bhatt Charotar Publishing House, Anand
3. A text book of Engineering Drawing by R.K.Dhawan, S.Chand & Company Ltd., New Delhi
4. A text book of Engineering Drawing by P.S.Gill, S.K.Kataria & sons, Delhi
5. Engineering Drawing by B. Agrawal and C M Agrawal, Tata McGraw Hill, New Delhi

Course Outcome:

Students will be able to:

Sr. No.	CO statement	Marks % weightage
CO 1	Know and understand the conventions and the methods of engineering drawing.	25
CO 2	Construct basic and intermediate geometry in engineering drawing.	15
CO 3	Improve their technical communication skill in the form of communicative drawings.	20
CO 4	Improve their visualization skills and understand technical drawing.	20
CO 5	Remember symbolic representation of various joints and section.	20

List of Open Source Software/learning website:

<https://nptel.ac.in>,