

LOK JAGRUTI UNIVERSITY (LJU)
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Mechanical Engineering (710)

Bachelor of Engineering (B.E.) – Semester – II

Course Code:	017102293
Course Name:	Engineering Graphics - II
Category of Course:	Engineering Science Course (ESC)
Prerequisite Course:	Engineering Graphics -I (017102191)

Teaching Scheme				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Total Hours
3	1	0	4	40

Syllabus				
Unit No.	Topic	Prerequisite Topic	Successive Topic	Teaching Hours
01	Projection of Solids - 1	Projections of planes (017102191-Unit-09)	---	4 (10%)
	1.1 Classification of solids			
	1.2 Definitions of different types of solids			
	1.3 Projections of pyramid with its inclination with one reference planes			
	1.4 Projections of pyramid with its inclination with two reference planes			
02	Projection of Solids - 2	Projections of solids-1 (017102293-Unit-01)	---	3 (7.5%)
	2.1 Projections of prism with its inclination with one reference planes			
	2.2 Projections of prism with its inclination with two reference planes			
03	Projection of Solids - 3	Projections of solids-1 (017102293-Unit-01)	---	3 (7.5%)
	3.1 Projections of cone and cylinder with its inclination with one reference planes			
	3.2 Projections of cone and cylinder with its inclination with two reference planes			
04	Sections of Solids	Projections of solids-1 (017102293-Unit-01), Projections of solids-2 (017102293-Unit-02), Projections of solids-3 (017102293-Unit-03)	---	5 (12.5%)
	4.1 Introduction of various cutting planes			
	4.2 Concept of Auxiliary Inclined Plane and Auxiliary Vertical plane			
	4.3 Section of cube, cylinder, cone, pyramid and prism and the true shape of the section with its inclination with one and two reference planes			
05	Development of Surfaces -1	Sections of solids (017102293-Unit-04)	---	3 (7.5%)
	5.1 Concept of different methods of development of lateral surfaces			
	5.2 Parallel line development method			
	5.3 Development of cube			
	5.4 Development of cylinder			
	5.5 Development of prisms			
06	Development of Surfaces -2	Sections of solids (017102293-Unit-04)	---	4 (10%)
	6.1 Radial line development method			
	6.3 Development of cone			
	6.4 Development of pyramids and tetrahedron			
07	Orthographic Projections	Projections of solids-1 (017102293-Unit-01), Projections of solids-2 (017102293-Unit-02), Projections of solids-3 (017102293-Unit-03)	Nomenclature and geometry of single point cutting tool, tool maker's microscope (017103302-Unit-2.1), Nomenclature and geometry of twist drill. (017103302-Unit-5.3), Fundamentals of computer aided manufacturing (017103503-Unit-03)	6 (15%)
	7.1 Principles of projector, projections and planes of projections			
	7.2 Concepts of methods of projections			
	7.3 Front view, top view and side views using first angle projection method			
	7.4 Front view, top view and side views using third angle projection method			
08	Sectional Orthographic Projections	Orthographic projections (017102293-Unit-07)	---	4 (10%)
	8.1 Introduction			
	8.2 Types of section			
	8.3 Full sectional views			
09	Isometric Projections and Isometric View or Drawing	Orthographic projections (017102293-Unit-07)	---	6 (15%)
	9.1 Isometric scale			
	9.2 Conversion of orthographic views into isometric view or drawing			
	9.3 Conversion of orthographic views into isometric projection			

10	Plan layout Drawing			2 (5%)
	10.1 Symbols for plant layout	Orthographic projections (017102293-Unit-07)	---	
	10.2 Line layout of building		---	
	10.3 Plan layout of building		---	

**Proposed Theory + Practical Evaluation Scheme by Academicians
(% Weightage Category Wise and it's Marks Distribution)**

L:	3	T:	1	P:	0
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Note: In Theory Group, Total 4 Test (T1+T2+T3+T4) will be conducted for each subject.

Each Test will be of 25 Marks.

Each Test Syllabus Weightage: Range should be 20% - 30%

Group (Theory or Practical)	Group (Theory or Practical) Credit	Total Subject Credit	Category	% Weightage	Marks Weightage	
Theory	4	4	MCQ	20%	20	
Theory			Theory Descriptive	10%	10	
Theory			Formulas and Derivation	0%	0	
Theory			Numerical	70%	70	
Expected Theory %	100%			Calculated Theory %	100%	100
Practical	0		Individual Project	0%	0	
Practical			Group Project	0%	0	
Practical			Internal Practical Evaluation (IPE)	0%	0	
Practical			Viva	0%	0	
Practical			Seminar	0%	0	
Expected Practical %	0%			Calculated Practical %	0%	0
Overall %	100%				100%	100

Course Outcome

	<i>Upon completion of the course students will be able to</i>
1	Develop the ability to visualize solid geometry and project different positions relative to the horizontal and vertical planes.
2	Understand and apply techniques for the lateral surface development of different solid models.
3	Demonstrate the capability to draw and project 3D models and intricate machine components using various orthographic views. Develop the skill to visualize the internal structures of complex bodies through the effective use of sectional views.
4	Acquire the skill to construct 3D isometric views from orthographic pictorial drawings. Create comprehensive architectural drawings, including plans, layouts, and line layouts of buildings, incorporating symbols representing different architectural elements.

Suggested Reference Books

1	Elementary Engineering Drawing by N.D. Bhatt, Charotar Publishing House, Anand.
2	Engineering Graphics by P.J. Shah, S. Chand and Company Ltd., New Delhi.
3	Engineering Graphics by P.B. Patel and P.D. Patel, Mahajan publishing house. Ahmedabad.
4	Engineering Drawing by P.S. Gill, S.K. Kataria and sons, Delhi.
5	Engineering Drawing by R.K. Dhawan, S. Chand and Company Ltd., New Delhi.
6	Engineering Drawing by B. Agrawal and C M Agrawal, Tata McGraw Hill, New Delhi.
7	Engineering Graphics – I and II", by Arunoday Kumar, Tech – Max Publication, Pune, 3rd Edition 2010.
8	Engineering Drawing and Graphics, by K. Venugopal, New Age International Publication, 5th Edition.
9	Building drawing, by M.G.Shah, C.M.Kale and S.Y.Patki Publisher: Tata McGraw Hill.

List of Open Source Software/Learning Website

1	http://nptel.ac.in/
2	Autodesk AutoCAD