



ANDHRA LOYOLA INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi & Affiliated to JNTU-Kakinada)
An ISO 9001:2008 Certified Institution, A NAAC Accredited Institution
Vijayawada

DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

A.Y. : 2020-2021

Subject: Engineering Drawing

Class : I B. Tech I Semester

Faculty: Dr. B.Sudheer Kumar

Course Objectives:

1. The objective is to introduce the students, the techniques of constructing the various types of polygons, curves and scales.
2. The objective is also to visualize and represent the 3D objects in 2D planes with proper dimensioning, scaling etc.

Course Outcomes:

Upon Successful Completion of this Course Students are able to:

CO1. Student's gain the knowledge about how to use the drawing instruments, and how to draw different types of polygons, curves and scales.

CO2. Student's gain knowledge on orthographic projections, projections of points, Straight line simple position, inclined to one and both the planes, angle of inclination and its traces.

CO3. Student's gain the knowledge about how to draw projections of different types of plane figures in different positions.

CO4: Student's gain the knowledge about how to draw projections of solids like prisms, pyramids, cone and cylinder at different positions.

CO5: Student's gain the knowledge about how to convert isometric views to orthographic views and vice versa, creating 2D&3D drawings of objects using Auto CAD.

LESSON PLAN - DAY WISE

Course Outcomes:

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1	Factual	Engineering drawing is essential for communicating ideas in industry. To make the drawings easier to understand, engineers use familiar symbols, standard units of measurement, notation systems, visual styles, and page layouts. These drawing conventions are internationally accepted standards.
2	Conceptual	The purpose is to convey all the information necessary for manufacturing a product accurately. Therefore Engineering drawings are prepared in such a way that they should convey the same meaning for everyone.
3	Procedural	The procedure for creating, developing, editing and modifying engineering drawing is called Drafting. It can be done either manually with the help of sophisticated drawing tools or with the help of CAD software.
4	Applied	An engineering drawing conveys information about a component or assembly. A common use is to specify the geometry necessary for the construction/manufacturing. The number of views necessary depends upon complexity of the component.

Detailed Text:

Schedule and Sequence: Day Plan for Unit-1

Session/ Module/ Day	Topic	Objectives	Before Class (Videos, E-Books, Case Studies)	In Class (Activities, Quiz, Solving Problems)	Post Class (Assignment, Discussion Forum)
Day - 1	Introduction	Students can able to understand the usage of drawing instruments	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	- Explanation using Black Board and practical instruments (2 hrs) - Explanation to how usage of drawing instruments (1hrs)	Doubts and Discussion on the topic
Day-2	Geometrical constructions	Student gain the knowledge on Geometrical constructions	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	- Explanation using Blackboard/PPT (1hr) - Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete charts if not completed To understand the lettering and geometrical constructions

Day-3	Polygons	The student gain knowledge on Construction of regular polygons by general methods.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending To understand the Construction of regular polygons by general methods.
Day-4	Polygons	The student gain knowledge on inscribing and describing polygons.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete charts if not completed To understand the Construction of regular polygons by inscribing and describing polygons on circles.
Day-5	Curves	To make the student gain knowledge on how to draw Ellipse by general and special methods	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of Ellipse by general and special methods with tangents & normal.
Day-6	Curves	To make the student gain knowledge on how to draw Parabola and Hyperbola by general and special methods.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand Parabola and Hyperbola by general and special methods with tangents & normal.

Day-7	Curves	To make the student gain knowledge on how to draw cycloids involutes.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand, cycloids, involutes, Tangents & normal.
Day-8	Scales	To make the student gain knowledge on Plain scales and diagonal scales	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of Plain scales and diagonal scales.
Day-9	Scales	To make the student gain knowledge on diagonal scales and vernier scales	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of diagonal scales and vernier scales

Detailed Text:

Schedule and Sequence: Day Plan for Unit-2

Day-10	Orthographic Projections & Projection of Points	To make the student gain knowledge orthographic projections	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of Reference plane, importance of reference lines, projections of points in various quadrants
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Day-11	Orthographic Projections & Projection of Points	To make the student gain knowledge projections of points	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of Reference plane, importance of reference lines, projections of points in various quadrants
Day-12	Projection of Straight Lines	To make the student gain knowledge on projection of lines in simple positions.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the basics of projections and projection of lines in different simple position.
Day-13	Projection of Straight Lines	To make the student gain knowledge on projection of lines inclined to both planes	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of lines inclined to both planes
Day-14	Projection of Straight Lines	To make the student gain knowledge on projection of lines with traces	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of lines inclined to both planes and its traces

Detailed Text:

Schedule and Sequence: Day Plan for Unit-3

Day-15	Projection of planes	To make the student gain knowledge on projection of planes in simple position	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of planes in simple position
Day-16	Projection of planes	To make the student gain knowledge on projection of planes inclined to one plane	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of planes when the plane is inclined to one plane
Day-17	Projection of planes	To make the student gain knowledge on projection of planes inclined to both the planes.	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Doubts and Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of planes when the plane is inclined to both horizontal and vertical planes

Detailed Text:

Schedule and Sequence: Day Plan for Unit-4

Day-18	Projection of solids	To make the student gain knowledge on projection of solids in simple position	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of solids in simple position
Day-19	Projection of solids	To make the student gain knowledge on projection of solids inclined to one plane	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of solids inclined to any one of the plane
Day-20	Projection of solids	To make the student gain knowledge on projection of solids inclined to both the planes	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of solids inclined to both horizontal and vertical planes
Day-21	Projection of solids	To make the student gain knowledge on projection of solids inclined to both the planes	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the construction of projection of solids inclined to both horizontal and vertical planes

Detailed Text:

Schedule and Sequence: Day Plan for Unit-5

Day-22	Orthographic views	To make the student gain knowledge conversion of orthographic views to isometric views	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the conversion of orthographic views to isometric views
Day-23	Orthographic views	To make the student gain knowledge conversion of orthographic views to isometric views	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To Understand the conversion of orthographic views to isometric views
Day-24	Isometric views	To make the student gain knowledge conversion of isometric views to orthographic views	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (2hrs) ● Student Creative Response (1hr)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the conversion of isometric views to orthographic views
Day-25	Isometric views	To make the student gain knowledge conversion of isometric views to orthographic views	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers	● Explanation using Blackboard/PPT/ videos. (1hr) ● Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the conversion of isometric views to orthographic views

Day-26	AutoCAD	To make the student gain knowledge on Auto CAD software used to draw 2D and 3D pictures	Engineering Drawing + AutoCad – K Venugopal, V. Prabhu Raja, New Age	• Explanation using Blackboard/PPT (2 hrs) • Student Creative Response (1hr)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the Basic commands of Auto CAD used for drawing 2D and 3D pictures
Day-27	AutoCAD	To make the student gain knowledge on Auto CAD software used to draw 2D and 3D pictures	Engineering Drawing + AutoCad – K Venugopal, V. Prabhu Raja, New Age	• Explanation using Blackboard/PPT (1hr) • Student Creative Response (2hrs)	Discussion on the topic, if needed. complete the charts if they are pending. To understand the Basic commands of Auto CAD used for drawing 2D and 3D pictures
Day-28	All	Pre final exam	Engineering Drawing –N.D.Butt, Chariot Publications/ K.L.Narayana & P.Kannaiah, Scitech Publishers and Drawing Sheets	• To conduct exam (3 hrs)	Need to analyse himself to get good marks in final exams