

Trinity Institute of Innovations in Professional Studies

Plot No. 2B/1, Knowledge Park - III, Greater Noida

SUBJECT LESSION PLAN

Course & Semester: B.Tech. (2nd sem)

Batch: 2022-26

Subject Name: Engineering Mechanics

Paper Code: ES-114

Unit	Lecture No.	Proposed date	Lecture content	Actual date	Remark
Unit- I	1	24/3/2023	1. Force System: Introduction, force, principle of transmissibility of force, resultant of a force system, resolution of a force,	24/3/2023	
	2	27/3/2023	2. Moment of force about a line, Varignon's theorem,	27/3/2023	
	3	28/3/2023	3. couple, resolution of force into force and a couple,	28/3/2023	
	4	29/3/2023	4. Properties of couple and their application to engineering problems.	29/3/2023	
	5	30/3/2023	5. Equilibrium: Force body diagram, equations of equilibrium and their applications to engineering problems,	30/3/2023	
	6	31/3/2023	6. Equilibrium of two force and three force members.	31/3/2023	
	7	03/4/2023	7. Distributed Forces: Determination of center of gravity,	03/4/2023	
	8	04/4/2023	8. Center of mass and centroid by direct integration by the method of composite bodies,	04/4/2023	
	9	05/4/2023	9. Continue lecture 8	05/4/2023	
	10	06/4/2023	10. Mass moment of inertia and area moment of inertia by direct integration and composite bodies method,	06/4/2023	
	11	07/4/2023	11. Continue lecture 10	07/4/2023	
	12	10/4/2023	12. Radius of gyration, parallel axis theorem, polar moment of inertial	10/4/2023	

Unit-II	1	11/4/2023	1. Structure: Plane truss, perfect and imperfect truss,	11/4/2023	
	2	12/4/2023	2. Assumption in the truss analysis, analysis of perfect plane	12/4/2023	
	3	13/4/2023	3. Trusses by the method of joints,	13/4/2023	
	4	14/4/2023	4. Truss by method of section and graphical method.	14/4/2023	
	5	17/4/2023	5. Continue lecture 4	17/4/2023	
	6	18/4/2023	6. Friction: Static and Kinetic friction,	18/4/2023	
	7	19/4/2023	7. Continue lecture 6	19/4/2023	
	8	20/4/2023	8. Laws of dry friction, co-efficient of friction,	20/4/2023	
	9	21/4/2023	9. Angle of friction, angle of repose, cone of friction,	21/4/2023	
	10	24/4/2023	10. Frictional lock, friction in flat pivot and collar bearing,	24/4/2023	
	11	25/4/202	11. Friction in flat belts.	25/4/202	
Unit-III	1	26/4/2023	1. Kinematics of Particles: Rectilinear motion,	26/4/2023	
	2	27/4/2023	2. Plane curvilinear motion, rectangular coordinates,	27/4/2023	
	3	28/4/2023	3. Continue lecture 2	28/4/2023	
	4	01/5/2023	4. Normal and tangential coordinates.	01/5/2023	
	5	02/5/2023	5. Kinetics of Particles: Equation of motion, rectilinear motion and curvilinear motion,	02/5/2023	
	6	03/5/2023	6. Continue lecture 5	03/5/2023	
	7	04/5/2023	7. Work-energy equation,	04/5/2023	
	8	05/5/2023	8. Conservation of energy, concept of impulse and momentum,	05/5/2023	
	9	08/5/2023	9. Continue lecture 8	08/5/2023	
	10	09/5/2023	10. Conservation of momentum, impact of bodies,	09/5/2023	
	11	10/5/2023	11. Continue lecture 10	10/5/2023	
	12	11/5/2023	12. Coefficient of restitution, loss of energy during impact.	11/5/2023	

Unit-IV	1	12/5/2023	1. Kinematics of Rigid Bodies: Concept of rigid body, types of rigid body motion,	12/5/2023
	2	15/5/2023	2. Absolute motion, introduction to relative velocity,	15/5/2023
	3	16/5/2023	3. Relative acceleration (Corioli's component excluded) and instantaneous center of zero velocity,	16/5/2023
	4	17/5/2023	4. Continue lecture 3	17/5/2023
	5	18/5/2023	5. Velocity and acceleration.	18/5/2023
	6	19/5/2023	6. Kinetics of Rigid Bodies: Equation of motion, translatory motion and fixed axis rotation, application of work	19/5/2023
	7	16/5/2023	7. Continue lecture 6	16/5/2023
	8	22/5/2023	8. Energy principles to rigid bodies conservation of energy.	22/5/2023
	9	23/5/2023	9. Continue lecture 8	23/5/2023
	10	24/5/2023	10. Beam: Introduction, types of loading, methods for the reactions of a beam,	24/5/2023
	11	25/5/2023	11. Space diagram, types of end supports,	25/5/2023
	12	26/5/2023	12. Beams subjected to couple.	26/5/2023

Text Books:

- 1 Engg Mechanics by Sadhu Singh (Khanna Publishers).
- 2 Engg Mechanics by A.K.Tayal (Umesh Publications).
- 3 Engg Mechanics by U.C.Jindal (Galgotia Publications).
- 4 Engg Mechanics by Beer & Johnston(TMH).

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