



PRIYADARSHINI BHAGWATI COLLEGE OF
ENGINEERING, NAGPUR
An Autonomous Institute Affiliated to RTM Nagpur University,
Nagpur.
Harpur nagar, Umred Road, Nagpur – 24



DEPARTMENT OF CIVIL ENGINEERING

**SYLLABUS OF FIRST YEAR BACHELOR OF TECHNOLOGY
SEMESTER I**

ENGINEERING MECHANICS

Total Credit: 3

Teaching Scheme

Lectures: 3 Hrs. / Week

Subject Code: CE105T

Examination scheme

Theory (E): 30 Marks & T(I): 20marks

Duration of End sem. Exam : 2Hrs

Course Objectives:

1. To make student aware about fundamental concept of statics and dynamics.
2. To introduce the concept of equilibrium and conditions of equilibrium.
3. To learn the concept of centroid and moment of inertia of plane area.
4. To introduce the concept of friction.


Course Outcomes:


After completion of the course, the student will be able to

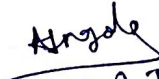
CO1: Describe the fundamental concepts of statics and dynamics.


CO2: Apply the basic concept of equilibrium for solution of problems on plane and General spatial force system.


CO3: Determine the centroid, moment of inertia of plane area and Apply the concept of friction for solving the problems.


(Dr. R. N. Patil)


Dr. K. H. Asutkar


Dr. A. A. Ingole

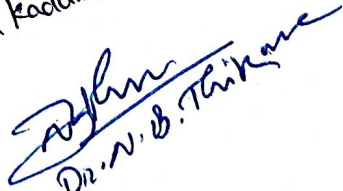

Dr. Shikha Kadam

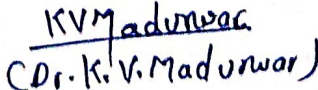

Dr. G. Mangrulkar


Dr. A. H. Bhat


Dr. N. S. Kulkarni


Dr. S. P. Patil


Dr. N. B. Thakare


Dr. K. V. Madunwar

Unit - I Fundamental of Engineering Mechanics (11 Hours) 10 Marks

Fundamental concepts, Position vector, resultant of 2-dimensional and 3-dimensional general force system. moment of forces about a point and axis, couple moment as a free vector.

UNIT – II Equilibrium of Force System and Truss (11 Hours) 10 Marks

Equilibrium of Force System

Free body diagrams, equations of equilibrium for coplanar and non-coplanar force systems, General spatial force system, types of support, types of beam and types of loads,

Analysis of plane truss by method of joint and Introduction of Method of Section.

Unit – III Centroid, Moment of Inertia and Friction (11 Hours) 10 Marks

First moment of area, problem on centroid of composite areas, second moment and product of inertia of plane areas, moment of inertia of composite areas.

Friction

Definitions, types of friction, limiting friction, laws of friction, simple application, wedge friction and belt friction.

Text Books:

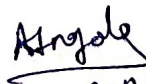
1. Engineering Mechanics: F. L. Singer, Harper & Row Publications.
2. Engineering Mechanics: Bear Johnston, Tata McGraw Hill Publication, New Delhi.
3. Engineering Mechanics: A. K. Tayal, Umesh Publication, New Delhi.
4. Engineering Mechanics: Prof. P.S. Lanjewar & Dr. A.M. Shende, Gayatri Prakashan.
5. Engineering Mechanics: Mohd. Gulfam Pathan & M. D. Pidurkar

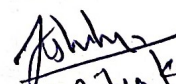
Reference Book:


1. Engineering Mechanics: Timoshenko & Young, Tata McGraw Hill Publication, New Delhi.
2. Engineering Mechanics: Statics and Dynamics, R C Hibbeler, Pearson Education


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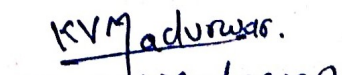

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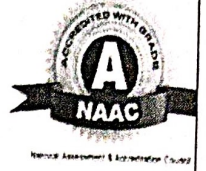

Dr. T. R. Patil


Dr. N. B. Thikare


Dr. K. V. Madhwar



Lokmanya Tilak Jankalyan Shikshan Sanstha's
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DEPARTMENT OF CIVIL ENGINEERING

**SYLLABUS OF FIRST YEAR BACHELOR OF TECHNOLOGY SEMESTER I
 CONSTRUCTION PRACTICES-I**

Total Credit: 2
Teaching Scheme
Practical : 4 Hrs. / Week

Subject Code: CE106P
Examination scheme
Pr (E): 50 Marks & Pr (I):
50 marks

Objectives:

1. To Use tape for measurement.
2. To identify building components
3. To understand various steel sections
4. To understand construction tools

Course Outcome : After completion of practical the students will be able to

1. Measure length, area and volume using tape.
2. Recognize and sketch building components.
3. Differentiate between various steel sections.
4. Use various tools in construction.

List of Experiments:

Minimum 10 Practicals to be performed from following list-

- 1) Use of measurement tape to determine length, Area, Volume in different units (M/Ft.)
- 2) Identification of different type of building structures, components and draw their sketches (Column, beam, walls, door, window, chajja, staircase, lintel, sill etc.)
- 3) To read various drawings like submission drawings, working drawings, RCC drawings etc.
- 4) Measure and draw line plan showing various components of existing room/ structure etc.
- 5) Identification of quality of various materials at site (Cement, Sand, Course aggregate, Bricks, steel)
- 6) Identification of various sections used in steel structure (L-Section, I-Section, C-Section etc)
- 7) Calculation of weight of rebar of various diameters using density formula and verify there the actual weights.
- 8) Marking of level using water level and use of spirit level

Dr. B. Thakur

Dr. P. R. Patil

Dr. K. H. Asutkar

Dr. A. A. Ingole
(Dr. K. V. Madhwar)

Dr. S. M. Kadam

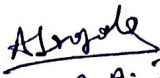
Dr. G. M. Mangrulkar

Dr. P. D. Patil


- 8) Marking of level using water level and use of spirit level
 - 9) Introduction and use of various tools for construction practices
 - 10) Demonstration of safety at site, safety equipment, sign boards, first aid.
 - 11) Calculation of material quantity in truck or trolley etc.
 - 12) Determination of quantity of tiles and bricks required in construction.
 - 13) To perform different plumbing connections
 - 14) Market survey of rates of different materials and labours.
- 1) One compulsory field visit



 (Dr. A. V. Patil)

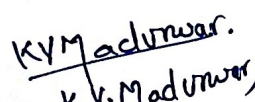

 Dr. K. G. Aswalekar



 Dr. A. A. Ingole


 Dr. Kshirya Kadam


 Dr. K. Mangrulkar


 Dr. A. M. Buiik


 Dr. K. K. Madhwar


 Dr. N. B. Thirkane


 Dr. P. P. Patil


 Dr. N. Uchitkar