



BOARD OF STUDIES MEETING – 2023-24
K.S.R.M COLLEGE OF ENGINEERING
AUTONOMOUS

Minutes of the Meeting




Date 27.09.2023
Time 11:30 AM
Dept./SS CE

Day Wednesday
Venue Virtual meeting: <https://meet.google.com/yyq-cyqf-hag>
Convener Dr. N. Amaranath Reddy

Members Present: 13

Members Absent: 00

S.No	Name	Designation	Signature	S.No	Name	Designation
1.	Dr. M. Heeralal	Prof., NIT Waranal				
2.	Dr. M. G. Muni Reddy	Prof., Andhra University College of Engineering				
3.	Dr. R. Bhavani	Prof., JNTU Ananthapur				
4.	Dr. M. Srinivasula Reddy	Associate Prof., GPRCE				
5.	Sri. Sunil Kumar Reddy Kasa	Technical Director, AECOM				
6.	Dr. N. Amaranath Reddy	Associate Prof., KSRMCE				
7.	Dr. G. Sreenivasa Reddy	Prof., KSRMCE				
8.	Dr. T. Kiran Kumar	Prof., KSRMCE				
9.	Dr. V. Giridhar	Prof., KSRMCE				
10.	Dr. V. Ramesh Babu	Associate Prof., KSRMCE				


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| 11. | Dr. P. Kishore Kumar Reddy | Associate Prof.,
KSRMCE |  |
| 12. | Sri. P. Suresh Praveen Kumar | Assistant Prof.,
KSRMCE |  |
| 13. | Sri. P. Rajendra Kumar | Assistant Prof.,
KSRMCE |  |

Dr. N. Amaranath Reddy, welcomed all the members to the meeting and presented the agenda of the meeting.

The resolutions are:

To do item	Discussion	Resolution	Coordinator/in-charge
1 Approval of I and II Semester syllabus Under R23UG Regulation	The Head of the Department has presented the syllabus designed by the faculty of CE by considering the stakeholders feedback & action taken report, suggestions of Department Review Committee and by comparing with premier institute syllabus.	The committee has approved the syllabus of I and II semesters with minor modifications. The suggested changes in the syllabus are given below: <ul style="list-style-type: none"> The committee suggested to incorporate the topic "Introduction to climate change" in Basic Civil Engineering Course 	Dr. N. Amaranath Reddy
2 To approve the list of New Courses and percentage of new courses.	The Head of the Department has presented the list of new courses offered in I and II semesters R23UG which was approved by Department Review Committee.	The committee approved the content for offering New Courses to implement in AY 2023-24.	Prof. V. Giridhar

The Head of the Department have proposed the Vote of thanks and Concluded the meeting.


Coordinator
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R23UG Course Structure

B. Tech.			I-Sem	CE, ME & ECE				
Sl. No.	Category	Course Code	Course Name	Common for	L/D	T	P	Credits
1	BS&H	2322104	Engineering Physics	CE, ME & ECE	3	0	0	3
2	BS&H	2321101	Linear Algebra and Calculus	CE, EEE, ME, ECE, CSE & AIML	3	0	0	3
3	Engg Science	23EE106	Basic Electrical & Electronics Engineering	CE, ME & ECE	3	0	0	3
4	Engg Science	2303108	Engineering Graphics	CE, ME & ECE	1	0	4	3
5	Engg Science	2324101	Communicative English	CE, ME & ECE	2	0	0	2
6	BS&H	2322115	Engineering Physics Lab	CE, ME & ECE	0	0	2	1
7	Engg Science	23EE114	Electrical and Electronics Engineering Workshop	CE, ME & ECE	0	0	3	1.5
8	Engg Science	2324110	Communicative English Lab	CE, ME & ECE	0	0	2	1
9	BS&H	2306116	Scouts and Guides	CE, ME & ECE	-	-	1	0.5
Total					12	0	15	18.0

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B. Tech.		II-Sem		CE				
Sl. No.	Category	Course Code	Course Name	Common for	L/D	T	P	Credits
1	BS&H	2305207	Introduction to Programming	CE, ME & ECE	3	0	0	3
2	BS&H	23EC202	Engineering Chemistry	CE, ME & ECE	3	0	0	3
3	Engg Science	2321201	Differential Equations & Vector Calculus	CE, EEE, ME, ECE, CSE & AIML	3	0	0	3
4	Engg Science	23CM205	Basic Civil and Mechanical Engineering	CE, ME & ECE	3	0	0	3
5	PC	2301204	Engineering Mechanics	CE & ME	3	0	0	3
6	BS&H	2305213	Computer Programming Lab	CE, ME & ECE	0	0	3	1.5
7	BS&H	23EC211	Engineering Chemistry Lab	CE, ME & ECE	0	0	2	1
8	Engg Science	2303212	Engineering Workshop	CE, ME & ECE	0	0	3	1.5
9	PC	2301206	Engineering Mechanics & Building Practices Lab	CE	0	0	3	1.5
10	Engg Science	2305209	IT Workshop	CE, ME & ECE	0	0	2	1
11	BS&H	2306217	Sports	CE, ME & ECE	-	-	1	0.5
Total					Head 14	0	11	22.0

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L	T	P	C
3	0	0	3

BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to All branches of Engineering)

Course Objectives:

- Get familiarized with the scope and importance of Civil Engineering sub-divisions.
- Introduce the preliminary concepts of surveying.
- Acquire preliminary knowledge on Transportation and its importance in nation's economy.
- Get familiarized with the importance of quality, conveyance and storage of water.
- Introduction to basic civil engineering materials and construction techniques.

Course Outcomes: On completion of the course, the student should be able to:

- CO1: Understand various sub-divisions of Civil Engineering and to appreciate their role in ensuring better society.
- CO2: Know the concepts of surveying and to understand the measurement of distances, angles and levels through surveying.
- CO3: Realize the importance of Transportation in nation's economy and the engineering measures related to Transportation.
- CO4: Understand the importance of Water Storage and Conveyance Structures so that the social responsibilities of water conservation will be appreciated.
- CO5: Understand the basic characteristics of Civil Engineering Materials and attain knowledge on prefabricated technology.

UNIT I

Basics of Civil Engineering: Role of Civil Engineers in Society- Various Disciplines of Civil Engineering- Structural Engineering- Geo-technical Engineering- Transportation Engineering - Hydraulics and Water Resources Engineering - Environmental Engineering-Scope of each discipline - Building Construction and Planning- Construction Materials-Cement - Aggregate - Bricks- Cement concrete- Steel. Introduction to Prefabricated construction Techniques.

UNIT II

Surveying: Objectives of Surveying- Horizontal Measurements- Angular Measurements- Introduction to Bearings Levelling instruments used for levelling -Simple problems on levelling and bearings-Contour mapping.

UNIT III

Transportation Engineering Importance of Transportation in Nation's economic development- Types of Highway Pavements- Flexible Pavements and Rigid Pavements - Simple Differences. Basics of Harbour, Tunnel, Airport, and Railway Engineering.

Water Resources and Environmental Engineering: Introduction, Sources of water- Quality of water- Specifications- Introduction to Hydrology–Rainwater Harvesting-Water Storage and Conveyance Structures (Simple introduction to Dams and Reservoirs) - Introduction to climate change.

Textbooks:

1. Basic Civil Engineering, M.S.Palanisamy, , Tata McGraw Hill publications (India) Pvt. Ltd. Fourth Edition.
2. Introduction to Civil Engineering, S.S. Bhavikatti, New Age International Publishers. 2022. First Edition.
3. Basic Civil Engineering, Satheesh Gopi, Pearson Publications, 2009, First Edition.

Reference Books:

1. Surveying, Vol- I and Vol-II, S.K. Duggal, Tata McGraw Hill Publishers 2019. Fifth Edition.
2. Hydrology and Water Resources Engineering, Santosh Kumar Garg, Khanna Publishers, Delhi. 2016
3. Irrigation Engineering and Hydraulic Structures - Santosh Kumar Garg, Khanna Publishers, Delhi 2023. 38th Edition.
4. Highway Engineering, S.K.Khanna, C.E.G. Justo and Veeraraghavan, Nemchand and Brothers Publications 2019. 10th Edition.
5. Indian Standard DRINKING WATER — SPECIFICATION IS 10500-2012.

PART B: BASIC MECHANICAL ENGINEERING

Course Objectives: The students after completing the course are expected to

- Get familiarized with the scope and importance of Mechanical Engineering in different sectors and industries.
- Explain different engineering materials and different manufacturing processes.
- Provide an overview of different thermal and mechanical transmission systems and introduce basics of robotics and its applications.

Course Outcomes: On completion of the course, the student should be able to

- CO1: Understand the different manufacturing processes.
CO2: Explain the basics of thermal engineering and its applications.
CO3: Describe the working of different mechanical power transmission systems and power plants.
CO4: Describe the basics of robotics and its applications.

UNIT I

Introduction to Mechanical Engineering: Role of Mechanical Engineering in Industries and Society- Technologies in different sectors such as Energy, Manufacturing, Automotive, Aerospace, and Marine sectors.

Engineering Materials - Metals-Ferrous and Non-ferrous, Ceramics, Composites, Smart materials.



L	T	P	C
3	0	0	3

ENGINEERING MECHANICS

(Common to Civil, Mechanical Engineering & Allied branches)

Course Objectives:

- To get familiarized with different types of force systems.
- To draw accurate free body diagrams representing forces and moments acting on a body to analyze the equilibrium of system of forces.
- To teach the basic principles of center of gravity, centroid and moment of inertia and determine them for different simple and composite bodies.
- To apply the Work-Energy method to particle motion.
- To understand the kinematics and kinetics of translational and rotational motion of rigid bodies.

Course Outcomes: On Completion of the course, the student should be able to

CO1: Understand the fundamental concepts in mechanics and determine the frictional forces for bodies in contact.

CO2: Analyze different force systems such as concurrent, coplanar and spatial systems and calculate their resultant forces and moments.

CO3: Calculate the centroids, center of gravity and moment of inertia of different geometrical shapes.

CO4: Apply the principles of work-energy and impulse-momentum to solve the problems of rectilinear and curvilinear motion of a particle.

CO5: Solve the problems involving the translational and rotational motion of rigid bodies.

UNIT I

Introduction to Engineering Mechanics– Basic Concepts. Scope and Applications

Systems of Forces: Coplanar Concurrent Forces– Components in Space–Resultant–Moment of Force and its Application –Couples and Resultant of Force Systems.

Friction: Introduction, limiting friction and impending motion, Coulomb's laws of dry friction, coefficient of friction, Cone of Static friction.

UNIT II

Equilibrium of Systems of Forces: Free Body Diagrams, Lami's Theorem, Equations of Equilibrium of Coplanar Systems, Graphical method for the equilibrium, Triangle law of forces, converse of the law of polygon of forces condition of equilibrium, Equations of Equilibrium for Spatial System of forces, Numerical examples on spatial system of forces using vector approach, Analysis of plane trusses.

Principle of virtual work with simple examples

UNIT III

Centroid: Centroids of simple figures (from basic principles)–Centroids of Composite Figures.

Centre of Gravity: Centre of gravity of simple body (from basic principles), Centre of gravity of composite bodies, Pappus theorems.

Area Moments of Inertia: Definition– Polar Moment of Inertia, Transfer Theorem, Moments of Inertia of Composite Figures, Products of Inertia, Transfer Formula for Product of Inertia.
Mass Moment of Inertia: Moment of Inertia of Masses, Transfer Formula for Mass Moments of Inertia, Mass Moment of Inertia of composite bodies.

UNIT IV

Rectilinear and Curvilinear motion of a particle: Kinematics and Kinetics –D'Alembert's Principle - Work Energy method and applications to particle motion-Impulse Momentum method.

UNIT V

Rigid body Motion: Kinematics and Kinetics of translation, Rotation about fixed axis and plane motion, Work Energy method and Impulse Momentum method.

Textbooks:

1. Engineering Mechanics, S. Timoshenko, D. H. Young, J.V. Rao, S. Pati., , McGraw Hill Education 2017. 5th Edition.
2. Engineering Mechanics, P.C.Dumir- S.Sengupta and Srinivas V veeravalli, University press. 2020. First Edition.
3. A Textbook of Engineering Mechanics, S.S Bhavikatti. New age international publications 2018. 4th Edition.

Reference Books:

1. Engineering Mechanics, Statics and Dynamics, Rogers and M A. Nelson., McGraw Hill Education. 2017. First Edition.
2. Engineering Mechanics, Statics and Dynamics, I.H. Shames., PHI, 2002. 4th Edition.
3. Engineering Mechanics, Volume-I: Statics, Volume-II: Dynamics, J. L. Meriam and L. G. Kraige., John Wiley, 2008. 6th Edition.
4. Introduction to Statics and Dynamics, Basudev Battachatia, Oxford University Press, 2014. Second Edition
5. Engineering Mechanics: Statics and Dynamics, Hibbeler R.C., Pearson Education, Inc., New Delhi, 2022, 14th Edition



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L	T	P	C
0	0	3	1.5

ENGINEERING MECHANICS & BUILDING PRACTICES LAB
(Civil Engineering & allied branches)

Course Objectives: The students completing the course are expected to

- Verify the Law of Parallelogram of Forces and Lami's theorem.
- Determine the coefficients of friction of Static and Rolling friction and Centre of gravity of different plane Lamina.
- Understand the layout of a building, concepts of Non-Destructive Testing and different Alternative Materials.

Course Outcomes: On completion of the course, the student should be able to:

CO1: Evaluate the coefficient of friction between two different surfaces and between the inclined plane and the roller.

CO2: Verify Law of Parallelogram of forces and Law of Moment using force polygon and bell crank lever.

CO3: Determine the Centre of gravity different configurations and

CO4: Understand the Quality Testing and Assessment Procedures and principles of Non-Destructive Testing.

CO5: Exposure to safety practices in the construction industry.

Students have to perform any 10 of the following Experiments:

1. To study various types of tools used in construction.
2. Forces in Pin Jointed Trusses
3. Experimental Proof of Lami's Theorem
4. Verification of Law of Parallelogram of Forces.
5. Determination of Center of Gravity of different shaped Plane Lamina.
6. Determination of coefficient of Static and Rolling Friction.
7. Verification of Law of Moment using Rotation Disc Apparatus and Bell Crank Lever
8. Study of Alternative Materials like M-sand, Fly ash, Sea Sand etc.
9. Field-Visit to understand the Quality Testing - report.
10. Safety Practices in Construction industry
11. Demonstration of Non-Destructive Testing - using Rebound Hammer & UPV
12. Study of Plumbing in buildings.



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