



List of New Course(s) Introduced

Department : *Chemical Engineering*

Programme Name : *B.Tech.*

Academic Year : *2020-21*

List of New Course(s) Introduced

| Sr. No. | Course Code | Name of the Course |
|---------|-------------|---|
| 01. | CH05TMC02 | Constitution of India-Basic Features and Fundamental Principles |
| 02. | CE201TES01 | Engineering Mechanics |
| 03. | CM201TES03 | Basic Civil & Mechanical Engineering |
| 04. | LW201TMC01 | Indian Constitution |
| 05. | CE201PES01 | Engineering Mechanics Lab |
| 06. | IT202TES05 | Introduction To Information Technology |
| 07. | EN202THS01 | English Communication |



Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : **2020-21**

School : **School of Studies of Engineering and Technology**

Department : **Chemical Engineering**

Date and Time : **July 27, 2020 - 11:00 AM**

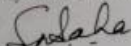
Venue : **Online**

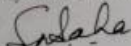
Minutes of Meeting

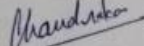
The scheduled meeting of member of Board of Studies (BoS) of Department of Chemical Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur was held today (July 27, 2020) in online mode (via Google Meet) to discuss the B.Tech. Third year (V and VI semesters) scheme and syllabi. The meeting was conducted in online mode due to Covid-19 pandemic and lock down. The following members were present in the meeting:

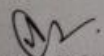
1. Prof. (Mrs.) A.B. Soni (External Expert Member BoS, Dept. of Chemical Engg., NIT Raipur)
2. Prof. S.N. Saha (Member BoS, Dept. of Chemical Engg.)
3. Dr. Anil Kumar Chandrakar (HoD (I/c), Associate Prof., Dept. of Chemical Engg.-cum-Chairman, BoS)
4. Mrs. Anuradha Nanewar Joshi (Member BoS, Assistant Professor, Dept. of Chemical Engg.)
5. Dr. Sagar Kumar Jaiswal (Invited Member, HoD (I/c), Dept. of Law)
6. Mr. Neeraj Chandrakar (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
7. Mr. Amit Jain (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
8. Mr. G.P. Dewangan (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
9. Dr. Raghendra Singh Thakur (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
10. Mr. Vishnu Prasad Yadav (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
11. Mr. Saurabh Meshram (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
12. Dr. Sandeep Dharmadhikari (Invited Member, Assistant Professor, Dept. of Chemical Engg.)
13. Dr. Ghoshna Jyoti (Invited Member, Assistant Professor, Dept. of Chemical Engg.)


The committee discussed and approved the scheme and syllabi of B.Tech. Third year (V and VI Semesters). As per decision amongst members present in the meeting, this scheme and syllabus is being sent to external BoS members for their review and formal consent. Because of the pre occupancy of External Industry Expert Member, Mr. Supranga Mohanty (Deputy Manager, HINDALCO, Mahan Unit, Bargawan, Singrauli) could not attend the online meeting. However, he has given the consent on the scheme and syllabi sent to him through mail.



Prof. (Mrs.) A.B. Soni
External Expert Member, BoS
Professor, Chemical Engg.,
NIT, Raipur



Prof. S.N. Saha
Member, BoS
Professor, Chemical Engg.

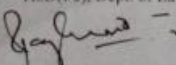

Dr. Anil Kumar Chandrakar
Chairman, BoS
HOD (I/c), Chemical Engg.



Mrs. A.N. Joshi
Member, BoS
Assistant Prof., Chemical Engg.

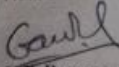

Dr. Sagar Kumar Jaiswal
Invited Member
HoD(I/c), Dept. of Law

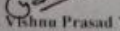

Mr. Neeraj Chandrakar
Invited Member
Assistant Prof., Chemical Engg.



Mr. Amit Jain
Invited Member
Assistant Prof., Chemical Engg.



Dr. Raghendra Singh Thakur
Invited Member
Assistant Prof., Chemical Engg.


Mr. Saurabh Meshram
Invited Member
Assistant Prof., Chemical Engg.


Mr. G.P. Dewangan
Invited Member
Assistant Prof., Chemical Engg.


Mr. Vishnu Prasad Yadav
Invited Member
Assistant Prof., Chemical Engg.


Dr. Sandeep Dharmadhikari
Invited Member
Assistant Prof., Chemical Engg.


Dr. Ghoshna Jyoti
Invited Member
Assistant Prof., Chemical Engg.



The following courses were revised in the of B. Tech. Third year (V and VI Semesters) First Year:

- ❖ Heat Transfer (CH05TPC08)
- ❖ Mass Transfer-I (CH05TPC09)
- ❖ Engineering Materials (CH05TPE11)
- ❖ Fluidization Engineering (CH05TOE11)
- ❖ Mass Transfer-II (CH06TPC11)
- ❖ Fertilizer Technology (CH06TPE31)

The following new courses were introduced in the of B. Tech. Third year (V and VI Semesters) and First Year:

- ❖ Constitution of India-Basic Features and Fundamental Principles (CH05TMC02)

विभागाध्यक्ष, रासायनिक अभियांत्रिकी
HoD, Chemical Engineering
प्रौद्योगिकी संस्थान/Institute of Technology
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Signature & Seal of HoD



Minutes of Meetings (MoM) of Board of Studies (BoS)

Academic Year : 2020-21

School : **School of Studies of Engineering and Technology**

Department : **Chemical Engineering**

Date and Time : **December 29, 2020 - 11:00 AM**

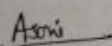
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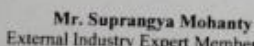
Minutes of Meeting

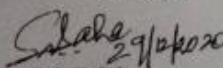
The scheduled meeting of member of Board of Studies (BOS) of Department of Chemical Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur was held today (December 29, 2020) in online mode (via Google Meet) to discuss the B.Tech. First year-(I and II semesters) scheme and syllabi for CBCS-New pattern. This scheme and syllabi will be applicable for the students of the batch admitted in session 2020-21. The meeting was conducted in online mode due to Covid-19 pandemic situation. The following members were present in the meeting:

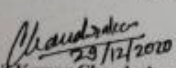
1. Prof. (Mrs.) A. B. Soni (External Expert Member BoS, Dept. of Chemical Engg., NIT Raipur)
2. Mr. Suprangya Mohanty (External Industry Expert Member BoS, Deputy Manager, HINDALCO, Mahan Unit, Bargawan, Singrauli)
3. Prof. S. N. Saha (Member BoS, Dept. of Chemical Engg.)
4. Dr. Anil Kumar Chandrakar (HOD, (I/c), Associate Prof., Dept. of Chemical Engg.-cum-Chairman, BOS)
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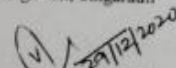
The committee discussed and approved the scheme and syllabi of B.Tech. First year (I and II Semesters). As per decision between members present in the meeting, this scheme and syllabus is being sent to external BOS members for their review and formal consent.

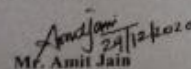

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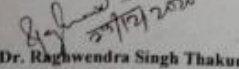

Mr. Suprangya Mohanty
External Industry Expert Member, BoS
Deputy Manager, HINDALCO
Mahan Unit, Bargawan, Singrauli



Prof. S. N. Saha
Member, BoS
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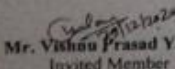

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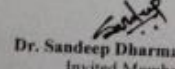

Mrs. A. N. Joshi
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Invited Member
Assistant Prof., Chemical Engg.


Dr. Sandeep Dharmadhikari
Invited Member
Assistant Prof., Chemical Engg.



The following courses were revised in the of B. Tech. First year (I and II semester):

- ❖ Mathematics-I (MA201TBS01)
- ❖ Mathematics-II (MA202TBS03)
- ❖ Basic Electrical And Electronics Engineering (EC201TES01)
- ❖ Engineering Graphics (ME201PES01)
- ❖ Basic Electrical And Electronics Engineering Lab (EC201PES03)

The following new courses were introduced in the of B. Tech. First year (I and II semester):

- ❖ Engineering Mechanics (CE201TES01)
- ❖ Engineering Mechanics Lab (CE201PES01)
- ❖ Basic Civil & Mechanical Engineering (CM201TES03)
- ❖ Indian Constitution (LW201TMC01)
- ❖ Introduction To Information Technology (IT202TES05)
- ❖ English Communication (EN202THS01)

विभागाध्यक्ष, रासायनिक अभियांत्रिकी
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Signature & Seal of HoD



CH05TMC02 Constitution of India-Basic Features [L:3, T:0, P:0]
and Fundamental Principles New Course Introduced

Objectives

The objective of the course is to provide an understanding of the main development and legacies of national movement and constitutional development in India, reasons for adopting a Parliamentary- federal system, the broad philosophy of the Constitution of India and the changing nature of Indian Political System. Challenges/ problems and issues concerning national integration and nation-building will also be discussed in the contemporary context aiming at developing a future vision for a better India.

Contents:

1. Meaning of the constitution law and constitutionalism.
2. Historical perspective of the Constitution of India.
3. Salient features and characteristics of the Constitution of India.
4. Scheme of the fundamental rights in Indian Constitution.
5. Right to Equality, Right to Freedom and Right to Life and Personal Liberty.
6. The scheme of the Fundamental Duties and its legal status.
7. The Directive Principles of State Policy-Its importance and implementation.
8. Federal structure and distribution of legislative and financial powers between the Union and the States.
9. Parliamentary Form of Government in India-The constitutional powers and status of the President of India.
10. Amendment Procedures in Constitution of India.
11. Emergency Provisions: National Emergency, President Rule, Financial Emergency.
12. Local Self Government – Constitutional Scheme in India.

Suggested Text Books :

1. The Idea of India by Sunil Khilnani, Penguin Books India Pvt. Ltd.
2. The Oxford Handbook of The Indian Constitution Edited by S. Choudhry, M. Khosla and P. B. Mehta, Oxford University Press.
3. Introduction to the Constitution of India by B. K. Sharma, PHI Learning Private Limited.
4. Transforming India: Challenges to the World's Largest Democracy by S. Bose, Harvard University Press.
5. Democracy and Discontent: India's Growing Crisis of Governability by A. Kohli, Cambridge University Press.
6. Indian Politics: Constitutional Foundations and Institutional Functioning by M. P. Singh and R. Saxena, PHI Learning Private Limited.
7. Rethinking Democracy by R. Kothari, Orient Longman Private Limited.

27/07/2020

C. S. 27/07/2020

M. S. 27/07/2020

S. S. 27/07/2020

M. S. 27/07/2020

S. S. 27/07/2020

M. S. 27/07/2020

S. S. 27/07/2020

M. S. 27/07/2020

S. S. 27/07/2020



SCHOOL OF STUDIES OF ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A CENTRAL UNIVERSITY)

CBCS-NEW, EVALUATION SCHEME

PROPOSED (W.E.F. SESSION 2020-21)

B. TECH. FIRST YEAR (SEMESTER-I)

(Common for CH, CE, IPE, ME)

| S.No. | COURSE No. | SUBJECT | PERIODS | | | EVALUATION SCHEME | | | CREDITS |
|--------------------|------------|--|-----------|----------|----------|-------------------|------------|------------|-----------|
| | | | L | T | P | IA | ESE | SUB-TOTAL | |
| THEORY | | | | | | | | | |
| 1. | MA201TBS01 | MATHEMATICS-I | 3 | 1 | - | 30 | 70 | 100 | 4 |
| 2. | CY201TBS02 | CHEMISTRY | 3 | 1 | - | 30 | 70 | 100 | 4 |
| 3. | CE201TES01 | ENGINEERING MECHANICS <small>New Course</small> | 3 | 0 | - | 30 | 70 | 100 | 4 |
| 4. | CS201TES02 | COMPUTER PROGRAMMING | 3 | 0 | - | 30 | 70 | 100 | 3 |
| 5. | CM201TES03 | BASIC CIVIL & MECHANICAL ENGINEERING <small>New Course</small> | 3 | 0 | - | 30 | 70 | 100 | 3 |
| 6. | LW201TMC01 | INDIAN CONSTITUTION <small>New Course</small> | 0 | 0 | - | - | - | - | - |
| TOTAL | | | 17 | 3 | - | 150 | 350 | 500 | 18 |
| PRACTICALS | | | | | | | | | |
| 1. | CY201PBS01 | CHEMISTRY LAB | - | - | 2 | 30 | 20 | 50 | 1 |
| 2. | CE201PES01 | ENGINEERING MECHANICS LAB <small>New Course</small> | - | - | 2 | 30 | 20 | 50 | 1 |
| 3. | CS201PES02 | COMPUTER PROGRAMMING LAB | - | - | 2 | 30 | 20 | 50 | 1 |
| TOTAL | | | - | - | 6 | 90 | 60 | 150 | 3 |
| GRAND TOTAL | | | 17 | 3 | 6 | 240 | 410 | 650 | 21 |

Total Credits:21

Total Contact Hours:26

Total Marks:650

L:LECTURE, T:TUTORIAL, P:PRACTICAL, IA : INTERNAL ASSESSMENT, ESE:END SEMESTER EXAMINATION

*INTERNAL ASSESSMENT- Two Class Test of 15 Marks each will be conducted.



SCHOOL OF STUDIES OF ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)
(A CENTRAL UNIVERSITY)

CBCS-NEW, EVALUATION SCHEME

PROPOSED (W.E.F. SESSION 2020-21)

B. TECH. FIRST YEAR (SEMESTER- II)

(Common for CH, CE, IPE, ME)

| S. No. | COURSE No. | SUBJECT | PERIODS | | | EVALUATION SCHEME | | | CREDITS |
|--------------------|------------|--|-----------|----------|----------|-------------------|------------|------------|-----------|
| | | | L | T | P | IA | ESE | SUB-TOTAL | |
| THEORY | | | | | | | | | |
| 1. | MA202TBS03 | MATHEMATICS-II | 3 | 1 | - | 30 | 70 | 100 | 4 |
| 2. | PH202TBS04 | PHYSICS | 3 | 1 | - | 30 | 70 | 100 | 4 |
| 3. | EC202TES04 | BASIC ELECTRICAL & ELECTRONICS ENGINEERING | 3 | 1 | - | 30 | 70 | 100 | 4 |
| 4. | IT202TES05 | INTRODUCTION TO INFORMATION TECHNOLOGIES <small>New Course</small> | 2 | 0 | - | 30 | 70 | 100 | 2 |
| 5. | EN202THS01 | ENGLISH COMMUNICATION | 3 | 0 | - | 30 | 70 | 100 | 3 |
| TOTAL | | | 14 | 3 | - | 150 | 350 | 500 | 17 |
| PRACTICALS | | | | | | | | | |
| 1. | PH202PBS02 | PHYSICS LAB | - | - | 2 | 30 | 20 | 50 | 1 |
| 2. | ME202PES03 | ENGINEERING GRAPHICS | 1 | - | 3 | 30 | 20 | 50 | 3 |
| 3. | ME202PES04 | WORKSHOP TECHNOLOGY & PRACTICES | 1 | - | 2 | 30 | 20 | 50 | 2 |
| 4. | EC202PES05 | BEE LAB | - | - | 2 | 30 | 20 | 50 | 1 |
| TOTAL | | | 2 | - | 9 | 120 | 80 | 200 | 7 |
| GRAND TOTAL | | | 16 | 3 | 9 | 270 | 430 | 700 | 24 |

Total Credits:24

Total Contact Hours:28

Total Marks:700

L:LECTURE, T:TUTORIAL, P:PRACTICAL, IA : INTERNAL ASSESSMENT, ESE:END SEMESTER EXAMINATION
*INTERNAL ASSESSMENT- Two Class Test of 15 Marks each will be conducted.



| SYLLABUS | (SEMESTER-I) | Periods/Week | | | Internal Assessment (IA) | | | ESE | Grand Total | Credits |
|----------------------|----------------------------|--------------|---|---|---------------------------|-------|-------|-----|-------------|---------|
| | | L | T | P | CT-I | CT-II | TOTAL | | | |
| <i>Subject Code:</i> | CE201TES01 / CE202TES03 | | | | | | | 70 | 100 | 04 |
| <i>Subject:</i> | ENGINEERING MECHANICS | 3 | 1 | - | 15 | 15 | 30 | | | |

Course Learning Objectives:

New Course Introduced

To learn about

- The concepts Force systems, free body diagrams, resultant of forces and equations of equilibrium, Supports and support reactions and calculation of Centroid
- The Concept of moment of inertia of plane figures, Laws and applications of friction
- The Analysis of the truss and determination of axial forces by Method of Joints
- Motion of a body and their relationships and application of D'Alembert's principle in rectilinear and curvilinear motions

Course Content:

UNIT- 1: Introduction to Engineering Mechanics covering, Force Systems Basic concepts, Particle equilibrium in 2-D & 3-D; Rigid Body equilibrium; System of Forces, Coplanar Concurrent Forces, Components in Space – Resultant- Moment of Forces and its Application; Couples and Resultant of Force System, Equilibrium of System of Forces, Free body diagrams, Equations of Equilibrium of Coplanar Systems and Spatial Systems

UNIT-2: Friction covering, Types of friction, Limiting friction, Laws of Friction, Static and Dynamic Friction; Motion of Bodies.

Basic Structural Analysis covering, Equilibrium in three dimensions; Method of Sections; Method of Joints; Simple Trusses; Zero force members.

UNIT 3: Centroid and Centre of Gravity covering, Centroid of simple figures from first principle, centroid of composite sections; Centre of Gravity and its implications; Area moment of inertia- Definition, Moment of inertia of plane sections from first principles, Theorems of moment of inertia, Moment of inertia of standard sections and composite sections.

UNIT-4: Virtual Work and Energy Method-Virtual displacements, principle of virtual work for particle and ideal system of rigid bodies, degrees of freedom. Active force diagram, systems with friction, mechanical efficiency.

Review of particle dynamics- Rectilinear motion; Newton's 2nd law (rectangular, path, and polar coordinates). Work-kinetic energy, power, potential energy. Impulse-momentum (linear, angular); Impact (Direct and oblique).

UNIT-5: Introduction to Kinetics of Rigid Bodies covering, Basic terms, general principles in dynamics; Types of motion, Instantaneous centre of rotation in plane motion and simple problems; D'Alembert's principle and its applications in plane motion and connected bodies; Work energy principle and its application in plane motion of connected bodies; Kinetics of rigid body rotation;



| SYLLABUS | (SEMESTER-I) | Periods/Week | | | Internal Assessment (IA) | | | ESE | Grand Total | Credits |
|----------------------|--------------------------------------|--------------|---|---|---------------------------|-------|-------|-----|-------------|---------|
| | | L | T | P | CT-I | CT-II | TOTAL | | | |
| <i>Subject Code:</i> | CM201TES03 / CM202TES05 | | | | | | | 70 | 100 | 03 |
| <i>Subject:</i> | BASIC CIVIL & MECHANICAL ENGINEERING | 3 | 0 | - | 15 | 15 | 30 | | | |

Course Learning Objectives:

New Course Introduced

- To study the properties and uses of basic civil engineering materials.
- To study the importance of NBC, IS Codes (materials), types of buildings and foundations, basic requirements of foundations.
- To study the basic types of surveys, linear and angular measurements, and GPS measurements
- To familiarize with the fundamentals of heat and work interactions, heat transfer mechanisms and energy conversion processes.
- To provide exposure to various engineering materials and processes of manufacturing.
- To impart basic knowledge of the interdisciplinary nature of engineering systems.

Course Content:

UNIT 1: Civil Engineering Materials: Properties & Uses of Stones, Bricks, Cement, Aggregates, Steel, Concrete-quality of good concrete, strength, curing and grade of concrete, standard tests on concrete. IS Codes and classification

UNIT 2: National Building Code (NBC), Salient features, Classification of Building as per NBC(India), Site selection for buildings - Components of building, Foundations-Introduction, Types of Foundations & its Suitability, Basic requirements and purpose of foundation on different soils.
Brief description about: Brick & stone masonry, Plastering, Lintels; Doors & Windows, Beams & columns, Formwork, Roofs.

UNIT 3: Surveying: Objects, uses, Basic principle, Classification, Plans & Maps, Scales, Units of measurement, Conventional symbols, Different survey equipment.
Measurements – Linear & Angular, levelling, Determination of Area & Volume, Introduction to Triangulation and GPS–

UNIT 4: Materials and Manufacturing, Introduction to engineering materials – metals, alloys, composites, smart materials, phase-change materials; Introduction to various processes of manufacturing – conventional machine tools – lathe and its types, shaping, milling and related operations – turning, threading, knurling, etc., unconventional methods.

UNIT 5: Automobile and Refrigeration and Air conditioning, Theoretical thermodynamic cycles and working principle of Petrol and Diesel Engines – Hybrid and Electric Vehicle - Turbines, Pumps, Compressors. Principle of vapour compression and absorption refrigeration system–Layout of typical domestic refrigerator–Window and Split type room Air conditioner. Introduction to renewable energy utilization and technology.

Textbooks/References:

1. Punmia, B.C, Ashok Kumar Jain, Arun Kumar Jain, Basic Civil Engineering, Lakshmi Publishers, 2012.
2. Satheesh Gopi, Basic Civil Engineering, Pearson Publishers, 2009.
3. Rangwala, S.C, Building materials, Charotar Publishing House, Pvt. Limited, Edition 27, 2009.
4. Palanichamy, M.S, Basic Civil Engineering, Tata McGraw Hill, 2000.



| SYLLABUS | (SEMESTER-I) | Periods/Week | | | Internal Assessment (IA) | | | ESE | Grand Total | Credits |
|----------------------|---------------------|--------------|---|---|---------------------------|-------|-------|-----|-------------|---------|
| | | L | T | P | CT-I | CT-II | TOTAL | | | |
| <i>Subject Code:</i> | LW201TMC01 | | | | | | | -- | -- | -- |
| <i>Subject:</i> | INDIAN CONSTITUTION | 2 | 0 | - | - | - | - | | | |

Course Learning Objectives:

- To the importance of preamble of the constitution of India.
- To understand the fundamental rights and duty as a citizen of India.
- To understand the functioning of union and state government and their inter-relationship.

New Course Introduced

Course Content:

UNIT 1: Introduction: Constitution-meaning of the term, Sources and constitutional theory, Features, Citizenship, Preamble.

UNIT 2: Fundamental Rights and Duties: Fundamental Rights, Fundamental Duties, Directive Principles of State Policy

UNIT 3: Union Government: Structure of Indian Union: Federalism, Centre-State relationship President: Role. Power and position, Prime Minister and council of ministers, Cabinet and Central Secretariat, Lok Sabha. Rajya Sabha

UNIT 4: State Government: Governor: Role and position, Chief Minister and council of ministers, State Secretariat

UNIT 5: Relationship between Centre and States: Distribution of Legislative Powers, Administrative Relations, Coordination between States

Textbooks/References:

- Constitution of India, V.N. Shukla
- The Constitutional Law of India, J.N. Pandey
- Indian Constitutional Law. M.P. Jain

Course Outcome: At the end of the course students will be able to:

- Describe the salient features of the Indian Constitution
- List the Fundamental Rights and Fundamental Duties of Indian citizens
- Describe the Directive Principles of State Policy and their significance

| SYLLABUS | (SEMESTER-I) | Periods/Week | | | INTERNAL ASSESSMENT (IA) | | | ESE | Grand total | Credits |
|----------------------|---------------------------|--------------|---|---|--------------------------|-----|-------|-----|-------------|---------|
| | | L | T | P | IA | MSE | TOTAL | | | |
| <i>Subject Code:</i> | CE201IES01/ CE202PES04 | | | | | | | 20 | 50 | 1 |
| <i>Subject:</i> | ENGG MECHANICS LAB | - | - | 2 | 30 | -- | 30 | | | |

Course Learning objectives:

- To perform the practical giving basic understanding to fundamental principles of mechanics like parallelogram of forces, triangle of forces and polygon of forces by universal force table
- To perform the practical giving basic understanding to fundamental application of mechanics like screw jack, winch crab and simple wheel and axle

New Course Introduced

Course Content:

List of Experiments

- Verification of law of parallelogram of forces.
- Verification of law of triangle of forces.
- Verification of law of polygon of forces by universal force table.
- Verification of law of moment by parallel forces apparatus.
- Practical verification of forces in the member of jib crane.
- Practical verification of forces in the member of the truss.
- Determination of coefficient of friction between two given surfaces by inclined plane method.
- Determination of efficiency of simple screw jack.
- Determination of efficiency of single purchase winch crab.
- Determination of efficiency of double purchase winch crab.
- Determination of efficiency of simple wheel and axle.

Course Outcome: At the end of the course students will be able to:

- Verify the fundamental principles of mechanics like parallelogram of forces, triangle of forces and polygon of forces by universal force table
- Analyze the friction coefficient between two surfaces
- Calculate the efficiency of screw jack, winch crab and wheel and axle



| SYLLAUS | (SEMESTER-II) | Periods/Week | | | Internal Assessment (IA) | | | ESE | Grand Total | Credits |
|----------------------|--|--------------|---|---|---------------------------|-------|-------|-----|-------------|---------|
| Subject Code: | IT201TES02 / IT202TES05 | L | T | P | CT-1 | CT-II | TOTAL | 70 | 100 | 02 |
| Subject: | INTRODUCTION TO INFORMATION TECHNOLOGIES | 2 | 0 | - | 15 | 15 | 30 | | | |

New Course Introduced

Course Learning Objectives:

1. To illustrate the concepts of cyber security and familiar and aware with various cybercrimes attack and their prevention.
2. To describe the different services model of Cloud Computing and understand Understanding of different evaluating computer model of cloud computing.
3. To relate theoretical concepts with problem solving approach in IoT and assess the comparative advantages and disadvantages of Virtualization technology.
4. To provides the basic knowledge of use appropriate storage and access structures. the student must be able to analyse familiar with the machine learning algorithms and applications of various data science.
5. To integrate classroom learning into an everyday communicative activity in distributed system. Familiar with various web services activity.

Course Content:

UNIT 1: Cyber Security

Fundamentals Security Concepts: Authentication, Authorization, Non-repudiation, Confidentiality, Integrity, availability. Cyber Crimes and Criminals: Definition of cyber-crime, types of cyber-crimes and types of cyber-criminals.

UNIT 2: Cloud Computing Fundamentals

Motivation for Cloud Computing, The Need for Cloud Computing, Defining Cloud Computing, Definition of Cloud computing, Cloud Computing Is a Service, Cloud Computing Is a Platform, Principles of Cloud computing, Five Essential Characteristics, Four Cloud Deployment Models.

UNIT 3: Internet of Things

Definition and Characteristics of IoT, Physical Design of IoT – IoT Protocols, IoT communication models, IOT Communication APIs IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics, Communication protocols, Embedded Systems, IoT Levels and Templates Domain Specific IoTs – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle.

UNIT 4: Data Science

Introduction and Importance of Data Science, Statistics, Information Visualisation, Data Mining, Data Structures, and Data Manipulation, Algorithms used in Machine Learning, Data Scientist Roles and Responsibilities. Data Acquisition and Data Science Life Cycle.

UNIT 5: Evaluation and Emergence of Web Services

Evaluation of Distributed Computing, Core Distributed Technologies, Challenges in Distributed System, and Introduction to web services, Web Services Architecture, Basic steps of implementing web services



| SYLLAUS | (SEMESTER-II) | Periods/ Week | | | Internal Assessment (IA) | | | ESE | Grand Total | Credits |
|----------------------|--------------------------|------------------|---|---|--------------------------|-------|-------|-----|----------------|---------|
| | | L | T | P | CT-1 | CT-II | TOTAL | | | |
| <i>Subject Code:</i> | EN202THS01 | | | | | | | 70 | 100 | 03 |
| <i>Subject:</i> | ENGLISH COMMUNICATION | 3 | 0 | - | 15 | 15 | 30 | | | |

Course Learning Objectives

New Course Introduced

- To build up word power, to brush up the knowledge of English grammar, to develop good writing and speaking skills in the students

Course Content:

UNIT 1: Vocabulary Building

The concept of Word Formation, Root words from foreign languages and their use in English, Acquaintance with prefixes and suffixes from foreign languages in English to form derivatives. Synonyms, antonyms, and standard abbreviations.

UNIT 2: Basic Writing Skills

Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Creating coherence, Organizing principles of paragraphs in documents, Techniques for writing precisely

UNIT 3: Identifying Common Errors in Writing

Subject-verb agreement, Noun-pronoun agreement, Misplaced modifiers, Articles, Prepositions, Redundancies, Clichés

Unit 4: Nature and Style of sensible Writing

Describing, Defining, Classifying, Providing examples or evidence, Writing introduction and conclusion.

UNIT 5: Writing Practices

Comprehension, Précis Writing, Essay Writing.

Oral Communication (This unit involves interactive practice sessions in Language Lab)

Listening Comprehension

Pronunciation, Intonation, Stress and Rhythm

Common Everyday Situations: Conversations and Dialogues

Communication at Workplace

Interviews

Formal Presentations

Textbooks/References:

1. Practical English Usage. Michael Swan. OUP. 1995.
2. Remedial English Grammar. F.T. Wood. Macmillan.2007 (iii)On Writing Well. William Zinsser. Harper Resource Book. 2001
3. Study Writing. Liz Hamp-Lyons and Ben Heasley. Cambridge University Press. 2006.
4. Communication Skills. Sanjay Kumar and PushpLata. Oxford University Press. 2011.
5. Exercises in Spoken English. Parts. I-III. CIEFL, Hyderabad. Oxford University Press

Course Outcome:

At the end of the course students will be able learn a lot of new words. They also learnt the particularities and peculiarities of English grammar. As a result, they could speak and write English with the least possible error