

List of New Course(s) Introduced

Department : **Computer Science and Engineering**

Programme Name : **B.Tech.**

Academic Year : **2020-21**

List of New Course(s) Introduced

Sr. No.	Course Code	Name of the Course
01.	CS06TOE03	Human Resource Management
02.	CS06TOE04	Business Intelligence
03.	CS06TOE02	E-Commerce
04.	CE201TES01	Engineering Mechanics
05.	CM201TES03	Basic Civil & Mechanical Engineering
06.	LW201TMC01	Indian Constitution
07.	CE201PES01	Engineering Mechanics Lab
08.	IT202TES05	Introduction To Information Technology
09.	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 : Computer Science and Engineering

Date and Time : July 10, 2020 – 11:30 AM

Venue : Department of CSE

The scheduled meeting of member of Board of Studies (BoS) of Department of Computer Science and Engineering , School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the B. Tech. Final year , 3rd Year and 2nd Year scheme and syllabi.

The following members were present in the meeting:

1. Dr. Sanjay Shrivastava (External Expert Member BoS, Dept. of CSE., Ravishankar University Raipur)
2. Mr. Amit Sharma (External Member, BOS)
3. Dr. Alok Kumar Singh Kushwaha(HOD, Associate Prof., Dept. of CSE.-cum Chairman, BOS)
4. Mrs.Nishi Yadav (Member BoS, Assistant Professor, Dept. of CSE)
5. Mr. Amit Baghel (Invited Member, Assistant Professor, Dept. of CSE)
6. Dr.Manish Shrivastava (Invited Member, Assistant Professor, Dept. of CSE)
7. Mrs. Raksha Pandey (Invited Member, Assistant Professor, Dept. of CSE)

Following points were discussed during the meeting

1. Syllabus revision for B. Tech 2nd year, 3rd Year and Final Year for the session 2020-21
2. Modification of the credit and course code of B. Tech 2nd year, 3rd Year and Final Year for the Session 2020-21
3. Implementation of CBCS in all year
4. Introduction of new subjects in the B.Tech. 3rd year and 4th

The committee discussed and approved the scheme and syllabi. The following courses were revised in the of B. Tech. :

- ❖ Artificial Intelligence (CS06TPE07)
- ❖ Java Lab(CS06PPC08)
- ❖ Java(CS06TPC12)
- ❖ Operating System(CS6TPC01)
- ❖ Microprocessor And Interface(CS05TES05)
- ❖ Parallel Computing(CS05TPC10)
- ❖ Parallel Computing Lab(CS05PPC06)
- ❖ Design And Analysis of Algorithms(CS06TPC11)
- ❖ Design And Analysis of Algorithms Lab(CS06PPC07)
- ❖ Soft Computing(CSSTPE01)
- ❖ Java(CS06TPC12)

The following new courses were introduced in the of B. Tech. Final year (VI Semesters):

- ❖ E-COMMERCE (CS06TOE02)
- ❖ HUMAN RESOURCE MANAGEMENT(CS06TOE03)
- ❖ BUSINESS INTELLIGENCE(CS06TOE04)

विभागाध्यक्ष
Head
संगणक विज्ञान एवं अभियांत्रिकी
Computer Science & Engg.
अभियांत्रिकी एवं प्रौ. अध्ययन शाला
SOS, Engg. & Technology
गु.घा. विश्वविद्यालय, बिलासपुर (छ.ग.)
S.G.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 : Computer Science and Engineering

Date and Time : December 29, 2020 – 11:00 AM

Venue : Online

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 to design and discuss the B. Tech. First year (I and II semesters) scheme and syllabi.

The following members were present in the meeting:

1. Prof. (Mrs.) A. B. Soni (External Expert Member BoS, Dept. of Chemical Engineering., NIT Raipur)
2. Prof. S. N. Saha (Member BoS, Dept. of Chemical Engineering)
3. Dr. Anil Kumar Chandrakar (HOD, Associate Prof., Dept. of Chemical Engineering.-cum Chairman, BOS)
4. Mrs. A. N. Joshi (Member BoS, Assistant Professor, Dept. of Chemical Engineering)
5. Mr. Amit Jain (Invited Member BoS, Assistant Professor, Dept. of Chemical Engineering)
6. Mr. G. P. Dewagan (Invited Member BoS, Assistant Professor, Dept. of Chemical Engineering)
7. Dr. Raghendra Singh Thakur (Invited Member BoS, Assistant Professor, Dept. of Chemical Engineering)
8. Mr. Vishnu Prasad Yadav (Invited Member BoS, Assistant Professor, Dept. of Chemical Engineering)
9. Dr. Sandeep Dharmadhikari (Invited Member BoS, Assistant Professor, Dept. of Chemical Engineering)
10. Mr. Supranga Mohanty (Deputy Manager, HINDALCO, Mahan Unit, Bargawan, Singrauli)

Following points were discussed during the meeting

2. The committee discussed and approved the scheme and syllabi of B.Tech. First year (I and II semester).

The committee discussed and approved the scheme and syllabi. 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)



विश्ववाच्यता
Head
संयुक्त विज्ञान एवं अभियांत्रिकी
Computer Science & Engg.
अभियांत्रिकी एवं प्रौ. अध्ययन काला
SOS, Engg. & Technology
मु.वा. विश्वविद्यालय, बिलासपुर (छ.ग.)
S.G.Vishwavidyalaya, Bilaspur (C.G.)

Signature & Seal of HoD

Scheme and Syllabus

**SCHEME FOR EXAMINATION
B.TECH (FOUR YEAR) DEGREE COURSE
COMPUTER SCIENCE AND ENGINEERING
SCHOOL OF STUDIES IN ENGINEERING & TECHNOLOGY
GURU GHASIDAS VISHWAVIDYALAYA
THIRD YEAR, SEMESTER - VI
W.E.F. SESSION 2020-21**

Branch :- Computer Science & Engg. Year : III Sem- VI

S. No.	Code no.	Subject	Periods			Evaluation Scheme			Credits
			L	T	P	IA	ESE	Total	
1	CS06TPC11	Design and Analysis of Algorithms	3	0	0	30	70	100	3
2	CS06TPC12	Java	3	0	0	30	70	100	3
3	CS06TPC13	Computer Graphics	3	0	0	30	70	100	3
4	CS06TPEX	Professional Elective-I	3	0	0	30	70	100	3
5	CS06TPEX	Professional Elective-II	3	0	0	30	70	100	3
6	CS06TOEX	Open Elective-I	3	0	0	30	70	100	3
PRACTICAL									
1	CS06PPC07	Design and Analysis of Algorithms Lab	0	0	3	30	20	50	1.5
2	CS06PPC08	Java Lab	0	0	3	30	20	50	1.5
3	CS06PPR02	Minor Project-II	0	0	3	30	20	50	1.5
Total									22.5

Professional Elective-I & II Subject VI Sem.				Open Elective-I Subject VI Sem.			
S.No	Subject Code	Subject	Credits	S.No	Subject Code	Subject	Credits
1	CS06TPE05	Digital Image Processing	3	1	CS06TOE01	Management Information System	3
2	CS06TPE06	Robotics	3	2	CS06TOE02	E-Commerce	3
3	CS06TPE07	Artificial Intelligence	3	3	CS06TOE03	Human Resource Management	3
4	CS06TPE08	Software Testing and Quality Assurance	3	4	CS06TOE04	Business Intelligence	3

Sub Title: E-COMMERCE		
Sub Code: CS06TOE02	No. of Credits : 3=3: 0: 0(L-T-P)	No of lecture hours/week :03
Exam Duration : 3 hours	IA+ESE=30+70	Total no of contact hours:36

COURSE OBJECTIVE:

1. Discuss fundamentals of e-commerce, types and applications.
2. Evaluate the role of the major types of information systems in a business environment and their relationship to each other
3. Assess the impact of the Internet and Internet technology on business electronic commerce and electronic business
4. Identify the major management challenges for building and using information systems and learn how to find appropriate solutions to those challenges.
5. Learn strategies for e-commerce, Mobile Commerce, Wireless Application Protocol, WAP technology and Mobile Information devices.

UNIT No	Syllabus Content	No of Hours
1	Introduction: Introduction to e-Commerce, e-Commerce Framework, e-Commerce and Media Convergence, Anatomy of e-Commerce Applications, e-Commerce Consumer Applications, e-Commerce Organization Applications	8
2	Network Infrastructure for E- Commerce: Internet and Intranet based E-commerce- Issues, problems and prospects, Network Infrastructure, Network Access Equipments, Broadband telecommunication (ATM, ISDN, FRAME RELAY). Mobile Commerce: Introduction, Wireless Application Protocol, WAP technology, Mobile Information device.	7
3	Web Security: Client-Server Network Security, Emerging Client-Server Security Threats, Firewalls and Network Security, Data and Message Security, Encrypted Documents and Electronic Mail, Challenge Response System.	7
4	Encryption: Encryption techniques, Symmetric Encryption: Keys and data encryption standard, Triple encryption, Secret key encryption; Asymmetric encryption: public and private pair key encryption, Digital Signatures, Virtual Private Network.	7
5	Electronic Payments: Overview, The SET protocol, Payment Gateway, certificate, digital Tokens, Smart card, credit card, magnetic strip card, E-Checks, Credit/Debit card based EPS, online Banking.EDI Application in business, E- Commerce Law, Forms of Agreement, Govt. policies and Agenda.	7

COURSE OUTCOMES: The students would have learnt

- CO1: Understand the basic concepts and technologies used in the field of management information systems
- CO2: Understand the processes of developing and implementing information systems
- CO3: Be aware of the ethical, social, and security issues of information systems and
- CO4: Develop an understanding of how various information systems work together to accomplish the information objectives of an organization
- CO5: Understand the role of information systems in organizations, the strategic management processes, and the implications for the management and learn about the importance of managing organizational change associated with information systems implementation

Sub Title: HUMAN RESOURCE MANAGEMENT		
Sub Code: CS06TOE03	No. of Credits : 3=3: 0: 0(L-T-P)	No of lecture hours/week :03
Exam Duration : 3 hours	IA+ESE=30+70	Total no of contact hours:36

COURSE OBJECTIVE:

1. To enable the students to understand the HR Management and system at various levels in general and in certain specific industries or organizations.
2. To help the students focus on and analyse the issues and strategies required to select and develop manpower resources
3. To develop relevant skills necessary for application in HR related issues
4. To Enable the students to integrate the understanding of various HR concepts along with the domain concept in order to take correct business decisions

UNIT No	Syllabus Content	No of Hours
1	Introduction: Introduction: Introduction to Human Resource Management and its definition, functions of Human Resource Management & its relation to other managerial functions. Nature, Scope and Importance of Human Resource Management in Industry, Role & position of Personnel function in the organization	8
2	Procurement and Placement: Need for Human Resource Planning; Process of Human Resource Planning; Methods of Recruitment; Psychological tests and interviewing; Meaning and Importance of Placement and Induction, Employment Exchanges (Compulsory Notification of vacancies) Act 1959, The Contract Labour (Regulation & Abolition) Act 1970. Training & Development: Difference between training and Development; Principles of Training; Employee Development; Promotion-Merit v/s seniority Performance Appraisal, Career Development & Planning	7
3	Job Analysis & Design: Job Analysis: Job Description & Job Description, Job Specification. Job Satisfaction: Job satisfaction and its importance; Motivation, Factors affecting motivation, introduction to Motivation Theory; Workers ' Participation, Quality of work life. The Compensation Function: Basic concepts in wage administration, company's wage policy, Job Evaluation, Issues in wage administration, Bonus & Incentives, Payment of Wages Act-1936, Minimum Wages Act-1961	7

4	Integration: Human Relations and Industrial Relations; Difference between Human Relations and Industrial Relations, Factors required for good Human Relation Policy in Industry; Employee Employer relationship Causes and Effects of Industrial disputes; Employees Grievances & their Redressal, Administration of Discipline, Communication in organization, Absenteeism, Labour Turnover, Changing face of the Indian work force and their environment, Importance of collective Bargaining; Role of trader unions in maintaining cordial Industrial Relations.	7
5	Maintenance: Fringe & retirement terminal benefits, administration of welfare amenities, Meaning and Importance of Employee Safety, Accidents-Causes & their Prevention, Safety Provisions under the Factories Act 1948; Welfare of Employees and its Importance, Social security, Family Pension Scheme, ESI act 1948, Workmen's Gratuity Act 1972, Future challenges for Human Resource Management..	7

COURSE OUTCOMES: The students would have learnt

- CO1: To develop the understanding of the concept of human resource management and to understand its relevance in organizations.
- CO2: To develop necessary skill set for application of various HR issues.
- CO3: To analyse the strategic issues and strategies required to select and develop manpower resources.
- CO4: To integrate the knowledge of HR concepts to take correct business decisions.

Text Books:

1. Thomas H. Corman, Charles E. Leiserson, Ronald Rivest, Clifford Stein, "Introduction to Algorithm" ,Publisher PHI. ISBN 81-203-2141-3
2. T.N.Chhabra- Human Resource Management, Dhanpat Rai & Co.

Reference Books:

1. Lowin B. Flippo - Principles of personnel Management , Mc Graw-Hill
2. R.C. Saxena - Labour Problems and social welfare, K.Math & Co.
3. A Minappa and M. S. Saiyada - Personnel Management , Tata Mc. Graw-Hill
4. C.B. Mamoria - Personnel Management, Himalaya Publishing House, Bombay
5. T.N. Bhagotiwai - Economics of Labour and Industrial Relations, Sahitya Bhawan Agra

Sub Title: BIG DATA ANALYSIS LAB	
Sub Code: CS08PPE04	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. Learn Injecting data into Hadoop
2. Learn to build and maintain reliable, scalable, distributed systems with Hadoop
3. Able to apply Hadoop ecosystem components.
4. To teach the fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.
5. To enable students to have skills that will help them to solve complex real-world problems in for decision support.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	<ul style="list-style-type: none"> • Study of Hadoop ecosystem • Programming exercises on Hadoop • Programming exercises in No SQL • Implementing simple algorithms in Map- Reduce (3) - Matrix multiplication, Aggregates, joins, sorting, searching etc. • Implementing any one Frequent Itemset algorithm using Map-Reduce • Implementing any one Clustering algorithm using Map-Reduce • Implementing any one data streaming algorithm using Map-Reduce • Mini Project: One real life large data application to be implemented (Use standard Datasets available on the web) a) Twitter data analysis b) Fraud Detection c) Text Mining etc. 	18

LAB OUTCOMES: The students would have learnt

- CO1: Preparing for data summarization, query, and analysis.
CO2: Applying data modelling techniques to large data sets
CO3: Creating applications for Big Data analytics
CO4: Building a complete business data analytic solution

Text Books:

1. Intelligent Data Analysis, Michael Berthold, David J. Hand, Springer, 2007.
2. Hadoop: The Definitive Guide, Tom White, Third Edition, O'reilly Media, 2012.
3. Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, Chris Eaton,

Sub Title: CLOUD COMPUTING LAB	
Sub Code: CS08PPE03	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. To discuss the fundamental concepts of Cloud Computing
2. To learn how to use install and configure Hadoop/MapReduce/HDFS
3. To learn how to create application using Hadoop/MapReduce
4. To learn Various Cloud services provided by Amazon Web Service etc.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	<ul style="list-style-type: none"> • Installation and configuration of Hadoop/MapReduce/HDFS • Service deployment and usage over cloud. • Create an application using Hadoop/MapReduce • Case Study: Google App Engine/ Microsoft Azure/ Amazon Web Services 	18

LAB OUTCOMES: The students would have learnt

- CO1: Examine the installation and configuration of Hadoop/Map Reduce
CO2: Describe the functioning of Platform as a Service
CO3: Create application using Hadoop/MapReduce
CO4: Analyze and understand the functioning of different components involved in Amazon web services cloud platform.

Text Books:

1. Cloud Computing: Principles and Paradigms by Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, Wiley.
2. Cloud Computing" by M. N. Rao, PHI.
3. Cloud Computing: A Practical Approach" by Toby Velte, Anthony Vote and Robert Elsenpeter, McGraw Hill.

Sub Title: MOBILE APPLICATION DEVELOPMENT LAB	
Sub Code: CS08PPE02	No. of Credits : 1.5=0: 0: 1.5(L-T-P)
Exam Duration : 3 hours	IA+ESE =30+20

Lab OBJECTIVE:

1. To understand the components and structure of mobile application development frameworks for Android and windows OS based mobiles.
2. To understand how to work with various mobile application development frameworks.
3. To learn the basic and important design concepts and issues of development of mobile applications.
4. To understand the capabilities and limitations of mobile devices.

Unit No.	Content	Teaching Hours
I, II, III, IV and V	<ul style="list-style-type: none"> • Develop an application that uses GUI components, Font and Colours • Develop an application that uses Layout Managers and event listeners. • Write an application that draws basic graphical primitives on the screen. • Develop an application that makes use of databases. • Develop an application that makes use of Notification Manager • Implement an application that uses Multi-threading • Develop a native application that uses GPS location information • Implement an application that writes data to the SD card. • Implement an application that creates an alert upon receiving a message • Write a mobile application that makes use of RSS feed • Develop a mobile application to send an email. • Develop a Mobile application for simple needs (Mini Project) 	18

LAB OUTCOMES: The students would have learnt

- CO1: Develop mobile applications using GUI and Layouts
CO2: Develop mobile applications using Event Listener.
CO3: Develop mobile applications using Databases.
CO4: Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multi-threading and GPS.
CO5: Analyze and discover own mobile app for simple needs

Sub Title: BUSINESS INTELLIGENCE		
Sub Code: CS06TOE04	No. of Credits : 3=3: 0: 0(L-T-P)	No of lecture hours/week :03
Exam Duration : 3 hours	IA+ESE=30+70	Total no of contact hours:36

<p>COURSE OBJECTIVE:</p> <ol style="list-style-type: none"> 1. Understand the role of BI in enterprise performance management and decision support. 2. Understand the applications of data mining and intelligent systems in managerial work. 3. Understand data warehousing and online analytical processing (OLAP) concepts. 4. Learn data analysis and reporting using available BI software. 5. Learn the responsibility of BI.

UNIT No	Syllabus Content	No of Hours
1	Business Intelligence Introduction to Business Intelligence: Introduction to OLTP and OLAP, BI Definitions & Concepts, Business Applications of BI, BI Framework, Role of Data Warehousing in BI, BI Infrastructure Components – BI Process, BI Technology, BI life cycle, BI Roles & Responsibilities.	8
2	Basics of Data Integration (Extraction Transformation Loading): Concepts of data integration need and advantages of using data integration, introduction to common data integration approaches, introduction to ETL, Introduction to data quality, data profiling concepts and applications.	7
3	Introduction to Multi-Dimensional Data Modeling: Introduction to data and dimension modeling, multidimensional data model, ER Modeling vs. multi dimensional modeling, concepts of dimensions, facts, cubes, attribute, hierarchies, star and snowflake schema, introduction to business metrics and KPIs, creating cubes using SSAS.	7
4	Basics of Enterprise Reporting: Introduction to enterprise reporting, concepts of dashboards, balanced scorecards, six sigma and overall architecture.	7
5	Data Mining Functionalities: Association rules mining, Mining Association rules from single level, multilevel transaction databases, Classification and prediction, Decision tree induction, Bayesian classification, k-nearest neighbor classification, Cluster analysis, Types of data in clustering, categorization of clustering methods.	7

COURSE OUTCOMES: The students would have learnt

- CO1: Gain knowledge of Business Intelligence.
- CO2: To build business projects.
- CO3: To generate and manage BI reports.
- CO4: To do BI Deployment, Administration & Security.
- CO5: Link Business Intelligence with Data Mining.

Text Books:

1. R N Prasad, Seema Acharya: Fundamentals of Business Analytics, Wiley India, First Edition, 2011
2. J.Han and M. Kamber: Data Mining: Concepts and Techniques By Morgan Kaufman publishers, Harcourt India pvt. Ltd. Latest Edition
3. David Loshin: Business Intelligence: The Savvy Manager's Guide., Latest Edition By Knowledge Enterprise.

Reference Books:

1. Larissa Terpeluk Moss, Shaku Atre: Business Intelligence roadmap by Addison Weseley
2. Cindi Howson: Successful Business Intelligence: Secrets to making Killer BI Applications by Tata McGraw Hill
3. Mike Biere: Business intelligence for the enterprise by Addison Weseley, August 2010



Scheme and Syllabus

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	New Course	-	-	30	70	100	4	
4.	CS201TES02	COMPUTER PROGRAMMING	3	0	-	30	70	100	3	
5.	CM201TES03	BASIC CIVIL & MECHANICAL ENGINEERING	New Course	3	0	-	30	70	3	
6.	LW201TMC01	INDIAN CONSTITUTION	New Course	0	-	-	-	-	-	
TOTAL			17	3	-	150	350	500	18	
PRACTICALS										
1.	CY201PBS01	CHEMISTRY LAB	-	-	2	30	20	50	1	
2.	CE201PES01	ENGINEERING MECHANICS LAB	New Course	-	-	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:

New Course Introduced

- 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.

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
		L	T	P	CT-1	CT-II	TOTAL			
Subject Code:	IT201TES02 / IT202TES05							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-I	CT-II	TOTAL			
Subject Code:	EN202THS01							70	100	03
Subject:	ENGLISH COMMUNICATION	3	0	-	15	15	30			

Course Learning Objectives

- 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