1.2.1 Percentage of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented (10)

Name of the New Course introduced in the last 5 Years	Programme Code	Programme name	Course Code	Year of Introduction	Status of implementation of CBCS / elective course system (Yes/No)	Year of implementation of CBCS / elective course system	Link to the relevant document
CIVIL							
Air Pollution & Control	1	Civil Engineering	RT41017	2018-19	YES	2019-20	
Traffic Engineering	1	Civil Engineering	RT42012E	2018-19	YES	2019-20	
Watershed Management	1	Civil Engineering	RT42013D	2018-19	YES	2019-20	
Repair & rehabilitation of Structures	1	Civil Engineering	RT42014C	2018-19	YES	2019-20	
Waste Water Management	1	Civil Engineering	R163201D	2018-19	YES	2019-20	
Traffic Engineering	1	Civil Engineering	R164101E	2019-20	YES	2020-21	
Pavement Analysis & Design	1	Civil Engineering	R164101J	2019-20	YES	2020-21	
Urban Transportation Planning Engineering	1	Civil Engineering	R1642014	2019-20	YES	2020-21	
EEE							
Instrumentation	2	Electrical and Electronics Engineering	RT41025	2016-17	YES	2018-2019	

Electrical Distribution Systems	2	Electrical and Electronics Engineering	RT41029	2016-17	YES	2018-2019	
Special Electrical Machines	2	Electrical and Electronics Engineering	RT42022C	2016-17	YES	2018-2019	
Flexible Alternating Current Transmission System	2	Electrical and Electronics Engineering	RT42023C	2016-17	YES	2018-2019	
AI Techniques	2	Electrical and Electronics Engineering	RT42024C	2016-17	YES	2019-2020	
Energy Audit and Conservation& Management	2	Electrical and Electronics Engineering	R163202F	2018-19	YES	2019-2020	
Instrumentation	2	Electrical and Electronics Engineering	R164102D	2019-20	YES	2019-2020	
Special Electrical Machines	2	Electrical and Electronics Engineering	R164102G	2019-20	YES	2019-2020	

Flexible Alternating Current Transmission System	2	Electrical and Electronics Engineering	R164204B	2019-20	YES	2019-2020	
Mechanical							
Nano Technology	3	Mechanical Engineering	RT41036	2016-2017	YES	2018-2019	
Design for Manufacture	3	Mechanical Engineering	RT41038	2016-2017	YES	2018-2019	
PowerPlant Engineering	3	Mechanical Engineering	RT42033D	2016-2017	YES	2018-2019	
Non Destructive Evaluation	3	Mechanical Engineering	RT342033A	2016-2017	YES	2019-2020	
Industrial Robotics	3	Mechanical Engineering	R163203C	2018-2019	YES	2019-2020	
Additive Manufacturing	3	Mechanical Engineering	R164103C	2019-2020	YES	2019-2020	
Design for Manufacture	3	Mechanical Engineering	R164103E	2019-2020	YES	2019-2020	
Non Destructive Evaluation	3	Mechanical Engineering	R164203B	2019-2020	YES	2019-2020	
ECE							
Satellite Communication	4	Electronics and Communication Engineering	RT42043A	2016-17	YES	2018-2019	

Low Power IC Design	4	Electronics and Communication Engineering	RT42044C	2016-17	YES	2018-2019	
Optical Communication	4	Electronics and Communication Engineering	RT4104A	2016-17	YES	2018-2019	
Electronic Switching Systems	4	Electronics and Communication Engineering	RT41042A	2016-17	YES	2018-2019	
OOPs Through JAVA	4	Electronics and Communication Engineering	R163204A	2018-19	YES	2019-2020	
Electronic Switching Systems	4	Electronics and Communication Engineering	R164104B	2019-20	YES	2019-2020	

Embedded Systems	4	Electronics and Communication Engineering	R164104D	2019-20	YES	2019-2020	
Wireless sensors & Networks	4	Electronics and Communication Engineering	R164204A	2019-20	YES	2019-2020	
CSE							
Artificial Intelligence	5	Computer Science Engineering	R1632055	2018-19	YES	2018-2019	
Software Testing Methodologies	5	Computer Science Engineering	RT41054	2018-19	YES	2018-2019	
Hadoop and Big Data	5	Computer Science Engineering	RT4105B	2018-19	YES	2018-2019	
Human Computer Interaction	5	Computer Science Engineering	RT42053A	2018-19	YES	2018-2019	
Cloud Computing	5	Computer Science Engineering	RT42043E	2018-19	YES	2019-2020	
IOT	5	Computer Science Engineering	R1632055	2019-20	YES	2019-2020	

Big Data Analysis	5	Computer Science Engineering	R164105A	2019-20	YES	2019-2020	
Software Project Management	5	Computer Science Engineering	R164105E	2019-20	YES	2019-2020	
Concurrent Parallel Programming	5	Computer Science Engineering	R164205A	2019-20	YES	2019-2020	
IOT	5	Computer Science Engineering	R1632055	2020-21	YES	2020-21	
Big Data Analysis	5	Computer Science Engineering	R164105A	2020-21	YES	2020-21	
Software Project Management	5	Computer Science Engineering	R164105E	2020-21	YES	2020-21	
Concurrent Parallel Programming	5	Computer Science Engineering	R164205A	2020-21	YES	2020-21	
MBA							
Leadership Management	0	Master of Business Administration	MB1634	2015-2016	YES	2018-2019	

Compensation & Reward Management	0	Master of Business Administration	MB1638	2015-2016	YES	2018-2019	
Performance Management	0	Master of Business Administration	MB163C	2015-2016	YES	2018-2019	
Strategic Human Resource Management	0	Master of Business Administration	MB163G	2015-2016	YES	2018-2019	
Security Analysis & Portfolio Management	0	Master of Business Administration	MB1635	2015-2016	YES	2018-2019	
Banking & Insurance Management	0	Master of Business Administration	MB1639	2015-2016	YES	2018-2019	
Advanced Management Accounting	0	Master of Business Administration	MB163D	2015-2016	YES	2018-2019	
Strategic Financial Management	0	Master of Business Administration	MB164H	2015-2016	YES	2018-2019	

Consumer Behavior	0	Master of Business Administration	MB1636	2015-2016	YES	2018-2019	
Retail Management	0	Master of Business Administration	MB163A	2015-2016	YES	2018-2019	
Customer Relationship Management	0	Master of Business Administration	MB163E	2015-2016	YES	2018-2019	
Strategic Marketing Management	0	Master of Business Administration	MB1631	2015-2016	YES	2018-2019	
Organizational Development & Change Management	0	Master of Business Administration	MB1643	2015-2016	YES	2018-2019	
Global HRM	0	Master of Business Administration	MB1647	2015-2016	YES	2018-2019	
Labor Welfare & Legislation	0	Master of Business Administration	MB164B	2015-2016	YES	2018-2019	

Management of Industrial Relations	0	Master of Business Administration	MB164F	2015-2016	YES	2018-2019	
Financial Markets & Services	0	Master of Business Administration	MB1644	2015-2016	YES	2018-2019	
Global Financial Management	0	Master of Business Administration	MB1648	2015-2016	YES	2018-2019	
Risk Management	0	Master of Business Administration	MB164C	2015-2016	YES	2018-2019	
Tax Management	0	Master of Business Administration	MB164G	2015-2016	YES	2018-2019	
Services Marketing	0	Master of Business Administration	MB1645	2015-2016	YES	2018-2019	
Promotional & Distribution Management	0	Master of Business Administration	MB1649	2015-2016	YES	2018-2019	

Global Marketing Management	0	Master of Business Administration	MB164D	2015-2016	YES	2018-2019	
Supply Chain Management	0	Master of Business Administration	MB164H	2015-2016	YES	2018-2019	
Cross Culture Management	0	Master of Business Administration	MB191A	2019-2020	YES	2019-2020	
Lean Management	0	Master of Business Administration	MB192C	2019-2020	YES	2019-2020	
Leadership & change Management	0	Master of Business Administration	MB193A1	2019-2020	YES	2020-2021	
Performance Evaluation & Compensation Management	0	Master of Business Administration	MB193A2	2019-2020	YES	2020-2021	
Human Capital Management	0	Master of Business Administration	MB193A4	2019-2020	YES	2020-2021	

Manpower Planning, Recruitment & selection	0	Master of Business Administration	MB193A5	2019-2020	YES	2020-2021	
Investment Analysis & Portfolio Management	0	Master of Business Administration	MB193B1	2019-2020	YES	2020-2021	
Managing banks & Financial Institutions	0	Master of Business Administration	MB193B2	2019-2020	YES	2020-2021	
Financial Markets & Services	0	Master of Business Administration	MB193B3	2019-2020	YES	2020-2021	
Taxation	0	Master of Business Administration	MB193B5	2019-2020	YES	2020-2021	
Consumer Behavior	0	Master of Business Administration	MB193C1	2019-2020	YES	2020-2021	
Retail Management	0	Master of Business Administration	MB193C2	2019-2020	YES	2020-2021	

Customer Relationship Management	0	Master of Business Administration	MB193C3	2019-2020	YES	2020-2021	
Strategic Marketing Management	0	Master of Business Administration	MB193C4	2019-2020	YES	2020-2021	
Services Marketing	0	Master of Business Administration	MB194C1	2019-2020	YES	2020-2021	
Promotional & Distribution Management	0	Master of Business Administration	MB194C2	2019-2020	YES	2020-2021	
Advertising & Brand Management	0	Master of Business Administration	MB194C4	2019-2020	YES	2020-2021	
Global Marketing Management	0	Master of Business Administration	MB194C5	2019-2020	YES	2020-2021	
Financial Derivatives	0	Master of Business Administration	MB194B1	2019-2020	YES	2020-2021	

Global Financial Management	0	Master of Business Administration	MB194B2	2019-2020	YES	2020-2021	
Strategic Financial Management	0	Master of Business Administration	MB194B4	2019-2020	YES	2020-2021	
Behavioural Finance	0	Master of Business Administration	MB194B5	2019-2020	YES	2020-2021	
Labor welfare & Employment Laws	0	Master of Business Administration	MB194A1	2019-2020	YES	2020-2021	
Employee Relations & Engagement	0	Master of Business Administration	MB194A3	2019-2020	YES	2020-2021	
Human Resources Development	0	Master of Business Administration	MB194A4	2019-2020	YES	2020-2021	
Srategic Human Resource Management	0	Master of Business Administration	MB194A5	2019-2020	YES	2020-2021	

COURSE STRUCTURE AND SYLLABUS

For

ELECTRICAL AND ELECTRONICS ENGINEERING

(Applicable for batches admitted from 2016-2017)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA - 533 003, Andhra Pradesh, India

I Year – I Semester

S. No	Subjects	L	T	P	Credits
1-HS	English – I	4	--	--	3
2-BS	Mathematics - I	4	--	--	3
3-ES	Applied Chemistry	4	--	--	3
4-BS	Engineering Mechanics	4	--	--	3
5-BS	Computer Programming	4	--	--	3
6-ES	Environmental Studies	4	--	--	3
7-HS	Applied / Engineering Chemistry Laboratory	--	--	3	2
8-BS	English- Communication Skills Laboratory - I	--	--	3	2
9-ES	Computer Programming Laboratory	--	--	3	2
	Total Credits				**24**

I Year – II Semester

S. No	Subjects	L	T	P	Credits
1-HS	English – II	4	--	--	3
2-BS	Mathematics – II (Mathematical Methods)	4	--	--	3
3-BS	Mathematics – III	4	--	--	3
4-ES	Applied Physics	4	--	--	3
5	Electrical Circuit Analysis - I	4	--	--	3
6-ES	Engineering Drawing	4	--	--	3
7-BS	English - Communication Skills Laboratory - II	--	--	3	2
8-HS	Applied / Engineering Physics Laboratory	--	--	3	2
9-ES	Applied / Engineering Physics – Virtual Labs - Assignments	--	--	2	--
10	Engg.Workshop & IT Workshop	--	--	3	2
	Total Credits				**24**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna R
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

II Year – I Semester

S. No	Subjects	L	T	P	Credits
1	Electrical Circuit Analysis - II	4	--	--	3
2	Electrical Machines-I	4	--	--	3
3	Basic Electronics and Devices	4	--	--	3
4	Electro Magnetic Fields	4	--	--	3
5	Thermal and Hydro Prime Movers	4	--	--	3
6	Managerial Economics & Financial Analysis	4	--	--	3
7	Thermal and Hydro Laboratory	--	--	3	2
8	Electrical Circuits Laboratory	--	--	3	2
	Total Credits				**22**

II Year – II Semester

S. No	Subjects	L	T	P	Credits
1	Electrical Measurements	4	--	--	3
2	Electrical Machines-II	4	--	--	3
3	Switching Theory and Logic Design	4	--	--	3
4	Control Systems	4	--	--	3
5	Power Systems-I	4	--	--	3
6	Management Science	4	--	--	3
7	Electrical Machines -I Laboratory	--	--	3	2
8	Electronic Devices & Circuits Laboratory	--	--	3	2
	Total Credits				**22**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Ra.
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III Year – I Semester

S. No	Subjects	L	T	P	Credits
1	Power Systems-II	4	--	--	3
2	Renewable Energy Sources	4	--	--	3
3	Signals and Systems	4	--	--	3
4	Pulse & Digital Circuits	4	--	--	3
5	Power Electronics	4	--	--	3
6	Electrical Machines-II Laboratory	--	--	3	2
7	Control Systems Laboratory	--	--	3	2
8	Electrical Measurements Laboratory	--	--	3	2
9-MC	IPR & Patents	--	2	--	--
	Total Credits				**21**

III Year – II Semester

S. No	Subjects	L	T	P	Credits
1	Power Electronic Controllers & Drives	4	--	--	3
2	Power System Analysis	4	--	--	3
3	Micro Processors and Micro controllers	4	--	--	3
4	Data Structures	4	--	--	3
5	Open Elective 1. Unix and Shell Programming 2. OOPS Through JAVA 3. VLSI Design 4. Robotics 5. Neural Networks &Fuzzy Logic 6. Energy Audit and Conservation& Management	4	--	--	3
6	Power Electronics Laboratory	--	--	3	2
7	Microprocessors & Microcontrollers Laboratory	--	--	3	2
8	Data Structures Laboratory	--	--	3	2
9-MC	Professional Ethics & Human Values	--	3	--	--
	Total Credits				**21**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year – I Semester

S. No	Subjects	L	T	P	Credits
1	Utilization of Electrical Energy	4	--	--	3
2	Linear IC Applications	4	--	--	3
3	Power System Operation & Control	4	--	--	3
4	Switchgear and Protection	4	--	--	3
5	**Elective – I:** 1. Electrical Machine Modeling and Analysis 2. Advanced Control Systems 3. Programmable Logic Controllers& Applications 4. Instrumentation	4	--	--	3
6	**Elective – II:** 1. Optimization Techniques 2. Electric Power Quality 3. Special Electrical Machines	4	--	--	3
7	Electrical Simulation Laboratory	--	--	2	2
8	Power Systems & Simulation Laboratory	--	--	2	2
	Total Credits				**22**

IV Year - II Semester

S. No	Subjects	L	T	P	Credits
1	Digital Control Systems	4	--	--	3
2	HVDC Transmission	4	--	--	3
3	Electrical Distribution Systems	4	--	--	3
4	**Elective – III:** 1. High Voltage Engineering 2. Flexible Alternating Current Transmission Systems 3. Power System Reforms	4	--	--	3
5	Seminar	--	3	--	2
6	Project	--	--	--	10
	Total Credits				**24**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

20-21

1-2-1

COURSE STRUCTURE AND SYLLABUS

For

COMPUTER SCIENCE AND ENGINEERING

(Applicable for batches admitted from 2016-2017)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA - 533 003, Andhra Pradesh, India

I Year - I Semester

S. No.	Subjects	L	T	P	Credits
1-HS	English – I	4	--	--	3
2-BS	Mathematics - I	4	--	--	3
3-BS	Mathematics – II (Mathematical Methods)	4	--	--	3
4-BS	Applied Physics	4	--	--	3
5	Computer Programming	4	--	--	3
6-ES	Engineering Drawing	4	--	--	3
7-HS	English - Communication Skills Lab - 1	--	--	3	2
8-BS	Applied / Engineering Physics Lab	--	--	3	2
9-ES	Applied / Engineering Physics – Virtual Labs – Assignments	--	--	2	--
10	Computer Programming Lab	--	--	3	2
	Total Credits				**24**

I Year - II SEMESTER

S. No.	Subjects	L	T	P	Credits
1-HS	English – II	4	--	--	3
2-BS	Mathematics - III	4	--	--	3
3-BS	Applied Chemistry	4	--	--	3
4	Object Oriented Programming through C++	4	--	--	3
5-HS	Environmental Studies	4	--	--	3
6-ES	Engineering Mechanics	4	--	--	3
7-BS	Applied / Engineering Chemistry Laboratory	--	--	3	2
8-HS	English - Communication Skills Lab – 2	--	--	3	2
9	Object Oriented Programming Lab	--	--	3	2
	Total Credits				**24**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

II Year - I Semester

S. No.	Subjects	L	T	P	Credits
1-HS	Statistics with R Programming	4	--	--	3
2	Mathematical Foundations of Computer Science	4	--	--	3
3	Digital Logic Design	4	--	--	3
4	Python Programming	4	--	--	3
5	Data Structures through C++	4	--	--	3
6	Computer Graphics	4	--	--	3
7	Data Structures through C++Lab	--	--	3	2
8	Python Programming Lab	--	--	3	2
	Total Credits				**22**

II Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Software Engineering	4	--	--	3
2	Java Programming	4	--	--	3
3	Advanced Data Structures	4	--	--	3
4	Computer Organization	4	--	--	3
5	Formal Languages and Automata Theory	4	--	--	3
6	Principles of Programming Languages	4	--	--	3
7	Advanced Data Structures Lab	--	--	3	2
8	Java Programming Lab	--	--	3	2
	Total Credits				**22**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna ...
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Compiler Design	4	--	--	3
2	Unix Programming	4	--	--	3
3	Object Oriented Analysis and Design using UML	4	--	--	3
4	Database Management Systems	4	--	--	3
5	Operating Systems	4	--	--	3
6	Unified Modeling Lab	--	--	3	2
7	Operating System & Linux Programming Lab	--	--	3	2
8	Database Management System Lab	--	--	3	2
MC	Professional Ethics & Human Values	--	3	--	--
	Total Credits				**21**

III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Computer Networks	4	2	--	3
2	Data Warehousing and Mining	4	--	--	3
3	Design and Analysis of Algorithms	4	--	--	3
4	Software Testing Methodologies	4	--	--	3
5	**Open Elective:** i. Artificial Intelligence ii. Internet of Things iii Cyber Security iv.Digital Signal Processing v.Embbeded Systems vi. Robotics	4	--	--	3
6	Network Programming Lab	--	--	3	2
7	Software Testing Lab	--	--	3	2
8	Data Warehousing and Mining Lab	--	--	3	2
9	IPR & Patents	--	2	--	--
	Total Credits				**21**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Cryptography and Network Security	4	--	--	3
2	Software Architecture & Design Patterns	4	--	--	3
3	Web Technologies	4	--	--	3
4- HS	Managerial Economics and Financial Analysis	4	--	--	3
5	**Elective-I** i. Big Data Analytics ii. Information Retrieval Systems iii. Mobile Computing	4	--	--	3
6	**Elective-II** i. Cloud Computing ii. Software Project Management iii. Scripting Languages	4	--	--	3
7	Software Architecture& Design Patterns Lab	--	--	3	2
8	Web Technologies Lab	--	--	3	2
	Total Credits				**22**

IV Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Distributed Systems	4	--	--	3
2- HS	Management Science	4	--	--	3
3	Machine Learning	4	--	--	3
4	**Elective-III** i.Concurrent and Parallel Programming ii.Artificial Neural Networks iii. Operations Research	4	--	--	3
5	Seminar	--	3	--	2
6	Project	--	--	--	10
	Total Credits				**24**

Total Course Credits = 48+44 + 42 + 46 = 180

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

INTERNET OF THINGS
(Open Elective)

OBJECTIVES:

- Identify problems that are amenable to solution by AI methods, and which AI methods may be suited to solving a given problem.
- Formalize a given problem in the language/framework of different AI methods (e.g., as a search problem, as a constraint satisfaction problem, as a planning problem, as a Markov decision process, etc).
- Implement basic AI algorithms (e.g., standard search algorithms or dynamic programming).
- Design and carry out an empirical evaluation of different algorithms on problem formalization, and state the conclusions that the evaluation supports.

UNIT - I:

The Internet of Things: An Overview of Internet of things,Internet of Things Technology, behind IoTs Sources of the IoTs, M2M Communication, Examples OF IoTs, Design Principles For Connected Devices

UNIT – II:

Business Models for Business Processes in the Internet of Things ,IoT/M2M systems LAYERS AND designs standardizations ,Modified OSI Stack for the IoT/M2M Systems ,ETSI M2M domains and High-level capabilities ,Communication Technologies, Data Enrichment and Consolidation and Device Management Gateway Ease of designing and affordability

UNIT – III:

Design Principles for the Web Connectivity for connected-Devices, Web Communication protocols for Connected Devices, Message Communication protocols for Connected Devices, Web Connectivity for connected-Devices.

UNIT– IV:

Internet Connectivity Principles, Internet connectivity, Application Layer Protocols: HTTP, HTTPS, FTP, Telnet.

UNIT– V:

Data Acquiring, Organizing and Analytics in IoT/M2M, Applications/Services/Business Processes, IOT/M2M Data Acquiring and Storage, Business Models for Business Processes in

the Internet Of Things, Organizing Data, Transactions, Business Processes, Integration and Enterprise Systems.

UNIT – VI

Data Collection, Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services, Data Collection, Storage and Computing Using cloud platform Everything as a service and Cloud Service Models, IOT cloud-based services using the Xively (Pachube/COSM), Nimbits and other platforms Sensor, Participatory Sensing, Actuator, Radio Frequency Identification, and Wireless, Sensor Network Technology, Sensors Technology ,Sensing the World.

OUTCOMES:

- Demonstrate knowledge and understanding of the security and ethical issues of the Internet of Things
- Conceptually identify vulnerabilities, including recent attacks, involving the Internet of Things
- Develop critical thinking skills
- Compare and contrast the threat environment based on industry and/or device type

TEXTBOOKS:

- Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education
- Internet of Things, A.Bahgya and V.Madisetti, Univesity Press, 2015

REFERNCE BOOKS:

1. Designingthe Internet of Things, Adrian McEwen and Hakim Cassimally, Wiley
2. Getting Started with the Internet of Things CunoPfister , Oreilly

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year – I Semester

L	T	P	C
4	0	0	3

BIG DATA ANALYTICS

(Elective - 1)

OBJECTIVES:

- Optimize business decisions and create competitive advantage with Big Data analytics
- Introducing Java concepts required for developing map reduce programs
- Derive business benefit from unstructured data
- Imparting the architectural concepts of Hadoop and introducing map reduce paradigm
- To introduce programming tools PIG & HIVE in Hadoop echo system.

UNIT-I

Data structures in Java: Linked List, Stacks, Queues, Sets, Maps; Generics: Generic classes and Type parameters, Implementing Generic Types, Generic Methods, Wrapper Classes, Concept of Serialization

UNIT-II

Working with Big Data: Google File System, Hadoop Distributed File System (HDFS) – Building blocks of Hadoop (Namenode, Datanode, Secondary Namenode, JobTracker, TaskTracker), Introducing and Configuring Hadoop cluster (Local, Pseudo-distributed mode, Fully Distributed mode), Configuring XML files.

UNIT-III

Writing MapReduce Programs: A Weather Dataset, Understanding Hadoop API for MapReduce Framework (Old and New), Basic programs of Hadoop MapReduce: Driver code, Mapper code, Reducer code, RecordReader, Combiner, Partitioner

UNIT-IV

Hadoop I/O: The Writable Interface, WritableComparable and comparators, Writable Classes: Writable wrappers for Java primitives, Text, BytesWritable, NullWritable, ObjectWritable and GenericWritable, Writable collections, Implementing a Custom Writable: Implementing a RawComparator for speed, Custom comparators

UNIT-V

Pig: Hadoop Programming Made Easier
Admiring the Pig Architecture, Going with the Pig Latin Application Flow, Working through the ABCs of Pig Latin, Evaluating Local and Distributed Modes of Running Pig Scripts, Checking out the Pig Script Interfaces, Scripting with Pig Latin

UNIT-VI

Applying Structure to Hadoop Data with Hive:
Saying Hello to Hive, Seeing How the Hive is Put Together, Getting Started with Apache Hive, Examining the Hive Clients, Working with Hive Data Types, Creating and Managing Databases and Tables, Seeing How the Hive Data Manipulation Language Works, Querying and Analyzing Data

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

OUTCOMES:

- Preparing for data summarization, query, and analysis.
- Applying data modeling techniques to large data sets
- Creating applications for Big Data analytics
- Building a complete business data analytic solution

TEXT BOOKS:

1. Big Java 4th Edition, Cay Horstmann, Wiley John Wiley & Sons, INC
2. Hadoop: The Definitive Guide by Tom White, 3rd Edition, O'reilly
3. Hadoop in Action by Chuck Lam, MANNING Publ.
4. Hadoop for Dummies by Dirk deRoos, Paul C.Zikopoulos, Roman B.Melnyk,Bruce Brown, Rafael Coss

REFERENCE BOOKS:

1. Hadoop in Practice by Alex Holmes, MANNING Publ.
2. Hadoop MapReduce Cookbook, SrinathPerera, ThilinaGunarathne

SOFTWARE LINKS:

1. Hadoop:http://hadoop.apache.org/
2. Hive: https://cwiki.apache.org/confluence/display/Hive/Home
3. Piglatin: http://pig.apache.org/docs/r0.7.0/tutorial.html

PRINCIPAL
Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

SOFTWARE PROJECT MANAGEMENT

(Elective - 2)

OBJECTIVES:

- To study how to plan and manage projects at each stage of the software development life cycle (SDLC)
- To train software project managers and other individuals involved in software project planning and tracking and oversight in the implementation of the software project management process.
- To understand successful software projects that support organization's strategic goals

UNIT -I:Introduction

Project, Management, Software Project Management activities, Challenges in software projects, Stakeholders, Objectives & goals

Project Planning: Step-wise planning, Project Scope, Project Products & deliverables, Project activities, Effort estimation, Infrastructure

UNIT -II:Project Approach

Lifecycle models, Choosing Technology, Prototyping

Iterative & incremental Process Framework: Lifecycle phases, Process Artifacts, Process workflows (Book 2)

UNIT -III:Effort estimation & activity Planning

Estimation techniques, Function Point analysis, SLOC, COCOMO, Use case-based estimation , Activity Identification Approaches, Network planning models, Critical path analysis

UNIT -IV: Risk Management

Risk categories, Identification, Assessment, Planning and management, PERT technique, Monte Carlo approach

UNIT -V:Project Monitoring & Control, Resource Allocation

Creating a framework for monitoring & control, Progress monitoring, Cost monitoring, Earned value Analysis, Defects Tracking, Issues Tracking, Status reports, Types of Resources, Identifying resource requirements, Resource scheduling

UNIT -VI:Software Quality

Planning Quality, Defining Quality - ISO 9016, Quality Measures, Quantitative Quality Management Planning, Product Quality & Process Quality

Metrics, Statistical Process Control Capability Maturity Model, Enhancing software Quality (Book3)

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

OUTCOMES:

- To match organizational needs to the most effective software development model
- To understand the basic concepts and issues of software project management
- To effectively Planning the software projects
- To implement the project plans through managing people, communications and change
- To select and employ mechanisms for tracking the software projects
- To conduct activities necessary to successfully complete and close the Software projects
- To develop the skills for tracking and controlling software deliverables
- To create project plans that address real-world management challenges

TEXT BOOKS:

1. Software Project Management, Bob Hughes & Mike Cotterell, TATA Mcgraw-Hill
2. Software Project Management, Walker Royce: Pearson Education, 2005.
3. Software Project Management in practice, Pankaj Jalote, Pearson.

REFERENCE BOOKS:

1. Software Project Management, Joel Henry, Pearson Education.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year – II Semester

L	T	P	C
4	0	0	3

CONCURRENT AND PARALLEL PROGRAMMING

(Elective - 3)

OBJECTIVES:

- Improvement of students comprehension of CPP, new programming concepts, paradigms and idioms
- Change of 'mood' regarding Concurrency counter-intuitiveness
- Proactive attitude: theoretical teaching shouldn't be so dull
- Multipath, individually paced, stop–and–replay, personalized learning process
- Frequent assessment of learning advances on the subject

UNIT- I

Concurrent versus sequential programming. Concurrent programming constructs and race condition. Synchronization primitives.

UNIT-II

Processes and threads. Interprocess communication. Livelock and deadlocks, starvation, and deadlock prevention. Issues and challenges in concurrent programming paradigm and current trends.

UNIT-III

Parallel algorithms – sorting, ranking, searching, traversals, prefix sum etc.,

UNIT- IV

Parallel programming paradigms – Data parallel, Task parallel, Shared memory and message passing, Parallel Architectures, GPGPU, pthreads, STM,

UNIT-V

OpenMP, OpenCL, Cilk++, Intel TBB, CUDA

UNIT-VI

Heterogeneous Computing: C++AMP, OpenCL

OUTCOMES:

- Understanding improvement of CPP concepts presented
- The number of reinforcement–exercises assigned
- The time required for the resolution of exercises
- Compliance level with the new model of theoretical teaching

TEXT BOOKS:

1. Mordechai Ben-Ari. Principles of Concurrent and Distributed Programming, Prentice-Hall International.
2. Greg Andrews. Concurrent Programming: Principles and Practice, Addison Wesley.
3. GadiTaubenfeld. Synchronization Algorithms and Concurrent Programming, Pearson.
4. M. Ben-Ari. Principles of Concurrent Programming, Prentice Hall.
5. Fred B. Schneider. On Concurrent Programming, Springer.
6. Brinch Hansen. The Origins of Concurrent Programming: From Semaphor

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

POTTI SRIRAMULU CHALAVADI MALLIKHARJUNA RAO
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE, NEW DELHI and Affiliated to JNTU, Kakinada
Sponsored by : SKPVV Hindu High Schools Committee, Estd : 1906
D.No. 7-3-6/1, Raghava Reddy Street, Kothapet, Vijayawada - 520 001.
Voice : 0866-2423442, 91777 77855, Fax : 0866-2423443, E-mail: principal@pscmr.ac.in, www.pscmr.ac.in

Department of Electronics ansd Communication Engineering

1.2.1 Percentage of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented (4) A

Programme Code	Programme name	Name of the new course introduced in the last 5 years	Course Code	Year of Introduction	Status of implemetation of CBCS / elective course system (Yes/No)	Year of implemetation of CBCS / elective course system	Link to the relevant document
OOPs Through JAVA	4	Electronics and Communication Engineering	R163204A	2018-19	YES	2020-2021	
Electronic Switching Systems	4	Electronics and Communication Engineering	R164104B	2019-20	YES	2020-2021	
Embedded Systems	4	Electronics and Communication Engineering	R164104D	2019-20	YES	2020-2021	
Wireless sensors & Networks	4	Electronics and Communication Engineering	R164204A	2019-20	YES	2020-2021	

Signature of HoD

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year - I Semester

L	T	P	C
4	0	0	3

EMBEDDED SYSTEMS
ELECTIVE - II

OBJECTIVES:

The main objectives of this course are given below:

- The basic concepts of an embedded system are introduced.
- The various elements of embedded hardware and their design principles are explained.
- Different steps involved in the design and development of firmware for embedded systems is elaborated.
- Internals of Real-Time operating system and the fundamentals of RTOS based embedded firmware design is discussed.
- Fundamental issues in hardware software co-design were presented and explained.
- Familiarise with the different IDEs for firmware development for different family of processors/controllers and embedded operating systems.
- Embedded system implementation and testing tools are introduced and discussed.

Outcomes:

At the end of this course the student can able to:

- Understand the basic concepts of an embedded system and able to know an embedded system design approach to perform a specific function.
- The hardware components required for an embedded system and the design approach of an embedded hardware.
- The various embedded firmware design approaches on embedded environment.
- Understand how to integrate hardware and firmware of an embedded system using real time operating system.

Syllabus

UNIT-I

INTRODUCTION: Embedded system-Definition, history of embedded systems, classification of embedded systems, major application areas of embedded systems, purpose of embedded systems, the typical embedded system-core of the embedded system, Memory, Sensors and Actuators, Communication Interface, Embedded firmware, Characteristics of an embedded system, Quality attributes of embedded systems, Application-specific and Domain-Specific examples of an embedded system.

UNIT-II

EMBEDDED HARDWARE DESIGN: Analog and digital electronic components, I/O types and examples, Serial communication devices, Parallel device ports, Wireless devices, Timer and counting devices, Watchdog timer, Real time clock.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

UNIT-III

EMBEDDED FIRMWARE DESIGN: Embedded Firmware design approaches, Embedded Firmware development languages, ISR concept, Interrupt sources, Interrupt servicing mechanism, Multiple interrupts, DMA, Device driver programming, Concepts of C versus Embedded C and Compiler versus Cross-compiler.

UNIT-IV

REAL TIME OPERATING SYSTEM: Operating system basics, Types of operating systems, Tasks, Process and Threads, Multiprocessing and Multitasking, Task Scheduling, Threads, Processes and Scheduling, Task communication, Task synchronisation, Device Drivers.

HARDWARE SOFTWARE CO-DESIGN: Fundamental Issues in Hardware Software Co-Design, Computational models in embedded design, Hardware software Trade-offs, Integration of Hardware and Firmware, ICE.

UNIT-V

EMBEDDED SYSTEM DEVELOPMENT: The integrated development environment, Types of files generated on cross-compilation, Deassembler/Decompiler, Simulators, Emulators and Debugging, Target hardware debugging, Boundary Scan, Embedded Software development process and tools.

UNIT-VI

E BEDDED SYSTEM IMPLEMENTATION AND TESTING: The main software utility tool, CAD and the hardware, Translation tools-Pre-processors, Interpreters, Compilers and Linkers, Debugging tools, Quality assurance and testing of the design, Testing on host machine, Simulators, Laboratory Tools.

Text Books:

1. Embedded Systems Architecture- By Tammy Noergaard, Elsevier Publications, 2013.
2. Embedded Systems-By Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013.

References:

1. Embedded System Design, Frank Vahid, Tony Givargis, John Wiley Publications, 2013.
2. Embedded Systems-Lyla B.Das-Pearson Publications, 2013.

****

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

ELECTRONIC SWITCHING SYSTEMS
(Elective- I)

OBJECTIVES :
The student will

- Understand the means of measuring traffic.
- Understand the implication of the traffic level on system design.

UNIT -I:
Introduction: Evolution of Telecommunications, Simple Telephone Communication, Basics of Switching System, Manual Switching System, Major Telecommunication Networks.
Crossbar Switching: Principles of Common Control, Touch Tone Dial Telephone, Principles of Crossbar Switching, Crossbar Switch Configurations, Cross point Technology, Crossbar Exchange Organization.

UNIT -II:
Electronic Space Division Switching: Stored Program Control, Centralized SPC: Stand by mode, Synchronous duplex mode, Distributed SPC, Software Architecture, Application Software, Enhanced Services, Two-Stage Networks, Three-Stage Networks, n- Stage Networks.

UNIT -III
Time Division Switching: Basic Time Division Space Switching, Basic Time Division Time Switching, Generalised time division Space switch, Basic Time division time switching: modes of operation, simple problems, Time Multiplexed Space Switching, Time Multiplexed Time division space Switch, Time Multiplexed Time Switching, Combination Switching: Time Space (TS) Switching, Space-time (ST) Switching, Three-Stage Combination Switching, n- Stage Combination Switching.

UNIT IV
Telephone Networks: Subscriber Loop System, Switching Hierarchy and Routing, Transmission Plan, Transmission Systems, Numbering Plan, Charging Plan, Signaling Techniques, In-channel Signaling, Common Channel Signaling, CCITT Signaling System no.6, CCITT Signaling System no.7, **Packet Switching:** Statistical Multiplexing, Local- Area and Wide- Area Networks, Large-scale Networks, Broadband Networks.

UNIT -V:
Switching Networks: Single- Stage Networks, Grading, Link Systems, Grades of service of link systems, Application of Graph Theory to link Systems, Use of Expansion, Call Packing,
Rearrange-able Networks, Strict- Sense non-blocking Networks, Sectionalized Switching Networks
Telecommunications Traffic: The Unit of Traffic, Congestion, Traffic Measurement, A Mathematical Model, Lost-call Systems, Queuing Systems. Problems

UNIT -VI:
Integrated Services Digital Network: Motivation for ISDN, New Services, Network and Protocol Architecture, Transmission Channels, User- Network Interfaces, Signaling, Numbering and Addressing, Service Characterization, Interworking, ISDN Standards, Expert Systems in ISDN, Broadband ISDN, Voice Data Integration.

TEXT BOOKS:
1. Telecommunication Switching Systems and Networks- Thiagarajan Viswanathan, 2000, PHI.
2. Telecommunications Switching, Traffic and Networks- J. E. Flood, 2006, Pearson Education.

REFERENCES:

1. Digital Telephony- J. Bellamy, 2nd Edition, 2001, John Wiley.
2. Data Communications and Networks- Achyut S. Godbole, 2004, TMH.
3. Principles of Communication Ststems- H. Taub & D. Schilling, 2nd Edition, 2003, TMH.
4. Data Communication & Networking- B. A. Forouzan, 3rd Edition, 2004, TMH.
5. Telecommunication System Engineering – Roger L. Freeman, 4th Ed., Wiley-Inter Science,John Wiley & Sons, 2004.

Outcomes

The student will be able to

- Evaluate the time and space parameters of a switched signal
- Establish the digital signal path in time and space, between two terminals
- Evaluate the inherent facilities within the system to test some of the SLIC, CODEC and digital switch functions.
- Investigate the traffic capacity of the system.
- Evaluate methods of collecting traffic data.
- Evaluate the method of interconnecting two separate digital switches.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year - II Semester

L	T	P	C
4	0	0	3

WIRELESS SENSORS AND NETWORKS
ELECTIVE-III

UNIT I

OVERVIEW OF WIRELESS SENSOR NETWORKS:

Key definitions of sensor networks, Advantages of sensor Networks, Unique constraints an challenges, Driving Applications, Enabling Technologies for Wireless Sensor Networks.

ARCHITECTURES:

Single-Node Architecture - Hardware Components, Energy Consumption of Sensor Nodes, Operating Systems and Execution Environments, Network Architecture -Sensor Network Scenarios, Optimization Goals and Figures of Merit, Gateway Concepts.

UNIT II

NETWORKING Technologies:

Physical Layer and Transceiver Design Considerations, Personal area networks (PANs), hidden node and exposed node problem, Topologies of PANs, MANETs, WANETs.

UNIT-III

MAC Protocols for Wireless Sensor Networks:

Issues in Designing a MAC protocol for Ad Hoc Wireless Networks, Design goals of a MAC Protocol for Ad Hoc Wireless Networks, Classifications of MAC Protocols, Contention - Based Protocols, Contention - Based Protocols with reservation Mechanisms, Contention – Based MAC Protocols with Scheduling Mechanisms, MAC Protocols that use Directional Antennas, Other MAC Protocols.

UNIT-IV

ROUTING PROTOCOLS:

Introduction, Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks, Classification of Routing Protocols, Table –Driven Routing Protocols, On – Demand Routing Protocols, Hybrid Routing Protocols, Routing Protocols with Efficient Flooding Mechanisms, Hierarchical Routing Protocols, Power – Aware Routing Protocols, Proactive Routing

UNIT-V

TRANSPORT LAYER AND SECURITY PROTOCOLS:

Introduction, Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks, Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks, Classification of Transport Layer Solutions, TCP Over Ad Hoc Wireless Networks, Other Transport Layer Protocol for Ad Hoc Wireless Networks,

UNIT- VI

SECURITY IN WSNs:

Security in Ad Hoc Wireless Networks, Network Security Requirements, Issues and Challenges in Security Provisioning, Network Security Attacks, Key Management, Secure Routing in Ad Hoc Wireless Networks.

SENSOR NETWORK PLATFORMS AND TOOLS:

Sensor Node Hardware – Berkeley Motes, Programming Challenges, Node-level software platforms, Node-level Simulators, State-centric programming.

APPLICATIONS of WSN:

S Ultra wide band radio communication, Wireless fidelity systems. Future directions, Home automation, smart metering Applications

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001

TEXT BOOKS:

1. Ad Hoc Wireless Networks: Architectures and Protocols - C. Siva Ram Murthy and B.S.Manoj, 2004, PHI
2. Wireless Ad- hoc and Sensor Networks: Protocols, Performance and Control – Jagannathan Sarangapani, CRC Press
3. Holger Karl & Andreas Willig, "Protocols And Architectures for Wireless Sensor Networks", John Wiley, 2005.

REFERENCES:

1. Kazem Sohraby, Daniel Minoli, & Taieb Znati, "Wireless Sensor Networks- Technology, Protocols, and Applications", John Wiley, 2007.
2. Feng Zhao & Leonidas J. Guibas, "Wireless Sensor Networks- An Information Processing Approach", Elsevier, 2007.
3. Ad- Hoc Mobile Wireless Networks: Protocols & Systems, C.K. Toh ,1 ed. Pearson Education.
4. Wireless Sensor Networks - C. S. Raghavendra, Krishna M. Sivalingam, 2004, Springer
5. Wireless Sensor Networks – S Anandamurugan , Lakshmi Publications

***

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III Year - II Semester

L	T	P	C
4	0	0	3

OOPS THROUGH JAVA
OPEN ELECTIVE

OBJECTIVES:

- Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.
- This course introduces computer programming using the JAVA programming language with object-oriented programming principles.
- Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using Java for network level programming and middleware development

UNIT-I:

Introduction to OOP, procedural programming language and object oriented language, principles of OOP, applications of OOP, history of java, java features, JVM, program structure.
Variables, primitive data types, identifiers, literals, operators, expressions, precedence rules and associativity, primitive type conversion and casting, flow of control.

UNIT-II:

Classes and objects, class declaration, creating objects, methods, constructors and constructor overloading, garbage collector, importance of static keyword and examples, this keyword, arrays, command line arguments, nested classes.

UNIT-III:

Inheritance, types of inheritance, super keyword, final keyword, overriding and abstract class.
Interfaces, creating the packages, using packages, importance of CLASSPATH and java.lang package. Exception handling, importance of try, catch, throw, throws and finally block, user-defined exceptions, Assertions.

UNIT-IV:

Multithreading: introduction, thread life cycle, creation of threads, thread priorities, thread synchronization, communication between threads. Reading data from files and writing data to files, random access file,

UNIT-V:

Applet class, Applet structure, Applet life cycle, sample Applet programs. Event handling: event delegation model, sources of event, Event Listeners, adapter classes, inner classes.

UNIT-VI:

AWT: introduction, components and containers, Button, Label, Checkbox, Radio Buttons, List Boxes, Choice Boxes, Container class, Layouts, Menu and Scrollbar.

OUTCOMES:

- Understand Java programming concepts and utilize Java Graphical User Interface in Program writing.
- Write, compile, execute and troubleshoot Java programming for networking concepts.
- Build Java Application for distributed environment.

- Identify and Analyze Enterprise applications.

TEXT BOOKS:

1. The complete Reference Java, 8th edition, Herbert Schildt, TMH.
2. Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford.
3. Introduction to java programming, 7th edition by Y Daniel Liang, Pearson.

REFERENCE BOOKS:

1. Swing: Introduction, JFrame, JApplet, JPanel, Componets in Swings, Layout Managers in
2. Swings, JList and JScrollPane, Split Pane, JTabbedPane, JTree, JTable, Dialog Box.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

ACADEMIC REGULATIONS

COURSE STRUCTURE & DETAILED SYLLABUS

For

MASTER OF BUSINESSADMINISTRATION

(Applicable for the batches admitted from 2019-20)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA – 533003, ANDHRA PRADESH, INDIA

I YEAR I SEMESTER							
S.NO	**Course Code**	**Courses**	**Marks**	**L**	**T**	**P**	**C**
1	C-101	Management and Organizational Behavior	100	4	0	0	4
2	C-102	Managerial Economics	100	4	0	0	4
3	C-103	Accounting for Managers	100	4	0	0	4
4	C-104	Quantitative Analysis for Business Decisions	100	4	0	0	4
5	C-105	Legal and Business Environment	100	4	0	0	4
6	C-106	Business Communication and Soft skills	100	2	0	2	4
7	C-107 Open Elective	Cross Cultural Management Rural Innovation projects MOOCs : SWAYAM/NPTEL- Related to Management Courses other than listed courses in the syllabus	100	4	0	0	4
8	C-108	Information Technology – Lab1(Spreadsheet and Tally)	50	0	0	2	2
		Total	**750**	**28**	**0**	**2**	**30**

I YEAR II SEMESTER							
S.No	**Course Code**	**Courses**	**Marks**	**L**	**T**	**P**	**C**
1	C-201	Financial Management	100	4	0	0	4
2	C-202	Human Resource Management	100	4	0	0	4
3	C-203	Marketing Management	100	4	0	0	4
4	C-204	Operations Management	100	4	0	0	4
5	C-205	Business Research Methods	100	4	0	0	4
6	C-206 open elective	Project Management Technology Management Lean Management Database Management System	100	4	0	0	4
7	C-207	IT-lab 2(Programming R)	50	0	0	2	2
		Total	**650**	**24**	**0**	**2**	**26**

III SEMESTER
Human Resource Management

S. no	Course Code	SUBJECT TITLE
1	EH-301	Leadership and Change Management
2	EH-302	Performance Evaluation and Compensation Management
3	EH-303	Human Resource Metrics and Analytics
4	EH-304	Human Capital Management
5	EH-305	Manpower Planning, Recruitment, and Selection

IV SEMESTER
Human Resource Management

S. no	Course Code	SUBJECT TITLE
6	EH-401	Labor Welfare and employment laws
7	EH-402	International HRM
8	EH-403	Employee Relations and Engagement
9	EH-404	Human Resources Development
10	EH-405	Strategic HRM

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

II YEAR III SEMESTER							
S.No	**Course Code**	**Courses**	**Marks**	**L**	**T**	**P**	**C**
1	C-301	Strategic Management	100	4	0	0	4
2	C -302	Operations Research	100	4	0	0	4
3	E -301	Elective – 1	100	4	0	0	3
4	E-302	Elective – 2	100	4	0	0	3
5	E-303	Elective – 3	100	4	0	0	3
6	E-304	Elective – 4	100	4	0	0	3
7	C-304	Industrial Project based on Summer Internship	150	4	0	0	4
		Total	**750**	**28**	**0**	**0**	**24**

II YEAR IV SEMESTER							
S.No	**Course Code**	**Courses**	**Marks**	**L**	**T**	**P**	**C**
1	C -401	Supply Chain Management and Analytics	100	4	0	0	4
2	C-402	Innovation and Entrepreneurship	100	4	0	0	4
3	E-401	Elective – 5	100	4	0	0	3
4	E-402	Elective – 6	100	4	0	0	3
5	E-403	Elective – 7	100	4	0	0	3
6	E-404	Elective – 8	100	4	0	0	3
7	C-403	Comprehensive Viva- voce	50	0	0	0	2
		Total Marks / Credits	**650**	**28**	**0**	**0**	**22**
			2800				**102**

*The project work documentation shall be checked with anti plagiarism software (Turnitin). The permissible similarity shall be less than 30%.

*Comprehensive Viva is to verify the student knowledge as a whole from which he was studied during the two year course work.

III SEMESTER - ELECTIVES
MARKETING

S. no	Course Code	SUBJECT TITLE
1	EM-301	Consumer Behavior
2	EM-302	Retail Management
3	EM-303	Customer Relationship Management
4	EM-304	Strategic Marketing Management
5	EM-305	Digital and Social Media Marketing

IV

SEMESTER MARKETING

S. no	Course Code	SUBJECT TITLE
6	EM-401	Services Marketing
7	EM-402	Promotional and Distribution Management
8	EM-403	Green Marketing
9	EM-404	Advertising and Brand Management
10	EM-405	Global Marketing Management

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III

SEMESTER FINANCE

S. no	Course Code	SUBJECT TITLE
1	EF-301	Investment Analysis and Portfolio Management
2	EF-302	Managing Banks and Financial Institutions
3	EF-303	Financial Markets and Services
4	EF-304	Mergers, Acquisitions and Corporate Restructuring
5	EF-305	Taxation

IV

SEMESTER FINANCE

S. no	Course Code	SUBJECT TITLE
6	EF-401	Financial Derivatives
7	EF-402	Global Financial Management
8	EF-403	Financial Risk Management
9	EF-404	Strategic Financial Management
10	EF-405	Behavioral Finance

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III SEMESTER - ELECTIVES
MARKETING

S. no	Course Code	SUBJECT TITLE
1	EM-301	Consumer Behavior
2	EM-302	Retail Management
3	EM-303	Customer Relationship Management
4	EM-304	Strategic Marketing Management
5	EM-305	Digital and Social Media Marketing

IV

SEMESTER MARKETING

S. no	Course Code	SUBJECT TITLE
6	EM-401	Services Marketing
7	EM-402	Promotional and Distribution Management
8	EM-403	Green Marketing
9	EM-404	Advertising and Brand Management
10	EM-405	Global Marketing Management

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA
MBA (REGULAR – R19) SEMESTER SYLLABUS

Cross Culture Management

Objective:

The objective of this course is to enhance the ability of class members to interact effectively with people from cultures other than their own, specifically in the context of international business. The course is aimed at significantly improving the ability of practicing managers to be effective global managers.

Unit – I

Introduction – Concept of Culture for a Business Context; Brief wrap up of organizational culture & its dimensions; Cultural Background of business stakeholders [managers, employees, shareholders, suppliers, customers and others] – An Analytical framework.

Unit – II

Culture and Global Management – Global Business Scenario and Role of Culture. Framework for Analysis; Elements & Processes of Communication across Cultures; Communication Strategy for/ of an Indian MNC and Foreign MNC & High-Performance Winning Teams and Cultures; Culture Implications for Team Building.

Unit – III

Cross Culture – Negotiation & Decision Making – Process of Negotiation and Needed Skills & Knowledge Base – Overview with two illustrations from multicultural contexts [India – Europe/ India – US settings, for instance]; International and Global Business Operations- Strategy Formulation & Implementation; Aligning Strategy, Structure & Culture in an organizational Context.

Unit – IV

Global Human Resources Management – Staffing and Training for Global Operations – Expatriate – Developing a Global Management Cadre.. Motivating and Leading; Developing the values and behaviours necessary to build high-performance organization personnel [individuals and teams included] – Retention strategies.

Unit – V

Corporate Culture – The Nature of Organizational Cultures Diagnosing the As is Condition; Designing the Strategy for a Culture Change Building; Successful Implementation of Culture Change Phase; Measurement of ongoing Improvement.

References:

1. Cashby Franklin, Revitalize your corporate culture: PHI, Delhi

2. Deresky Helen, International Management: Managing Across Borders and Cultures, PHI, Delhi

LEAN MANAGEMENT

2.

To understand issues and challenges in implementing and development in lean manufacturing techniques from TPS and its contribution for improving organizational performance.

Unit- I

Introduction: Mass production system, Craft Production, Origin of Lean production system , Why Lean production , Lean revolution in Toyota , Systems and systems thinking , Basic image of lean production , Customer focus , Waste Management.

UNIT- II

Just In Time: Why JIT , Basic Principles of JIT, JIT system, Kanban, Six Kanban rules, Expanded role of conveyance, Production leveling, Three types of Pull systems, Value stream mapping. JIDOKA, Development of Jidoka concept, Why Jidoka, Poka, Yoke systems, Inspection systems and zone control – Types and use of Poka-Yoke systems, Implementation of Jidoka

UNIT -III

Kaizen: Six – Sigma philosophy and Methodologies ,QFD, FMEA Robust Design concepts; SPC, QC circles standardized work in lean system , Standards in the lean system, 5S system.

UNIT- IV

Total Productive Maintenance: Why Standardized work, Elements of standardized work, Charts to define standardized work, Kaizen and Standardized work Common layouts.

UNIT- V

Hoshin Planning & Lean Culture: Involvement, Activities supporting involvement, Quality circle activity, Kaizen training, Key factors of PKT success, Hoshin Planning System, Four Phases of Hoshin Planning, Why Lean culture – How lean culture feels.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Jeffrey Liker, The Toyota Way: Fourteen Management Principles from the World's Greatest Manufacturer, McGraw Hill, 2004.
2. Debashish Sarkar , Lessons in Lean Management,

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Ra.
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Leadership & Change Management

Unit I:

Organisational Leadership: Definition, Components and evaluation of leadership, factors of leadership, Situational Leadership Behaviour: Meaning, Fiedler Contingency Model, Path Goal and Normative Models - Emerging Leadership Behaviour: Transformational, Transactional and Visionary Leadership - Leadership for the new Millennium Organisations - Leadership in Indian Organisations. Leadership Effectiveness: Meaning, Reddins' 3-D Model, Hersey and Blanchard Situational Model, Driving Leadership Effectiveness, Leadership for Organisational Building.

Unit II:

Leadership Motivation, Culture: Motivation Theories for Leadership- Emerging Challenges in Motivating Employees. Motivation, Satisfaction, Performance.Organisational Culture: Meaning, Definitions, Significance, Dimensions, Managing Organisational Culture, Changing organisational Cultural.Leadership Development: Leadership development: Significance – Continuous Learning: Principles of learning to develop effective leadership – Vision and Goals for organisation: significance of goals for leaders – Charting vision and goals of Indian leaders and abroad.

Unit III:

Strategic Leadership: Leader Self management: significance - Developing self esteem and balancing emotions – Interpersonal Leadership Skills: Praise – Criticise – Communicate – Leadership Assertiveness: Circle of influence and circle of concern – Leadership with Edification: Tools of edification – Leadership and creativity: Developing creative thinking – Leadership and Team Building: Principles of team building, individual versus Group versus Teams – Leadership and Integrity: Developing character and values.

UNIT IV:

Basics of Change Management: Meaning, nature and Types of Change – change programmes – change levers – change as transformation – change as turnaround – value based change.

UNIT V:

Mapping change: The role of diagramming in system investigation – A review of basic flow diagramming techniques –systems relationships – systems diagramming and mapping, influence charts, multiple cause diagrams- a multidisciplinary approach -Systems approach to change: systems autonomy and behavior – the intervention strategy model – total project management model (TPMM). Organization Development (OD): Meaning, Nature and scope of OD - Dynamics of planned change – Person-focused and role-focused OD interventions –Planning OD Strategy – OD interventions in Indian Organizations – Challenges to OD Practioners

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

Reference Books:

1. Peter G. Northouse, Leadership, 2010, Sage. Publication.
2. Richard L. Daft -Leadershipl Cengage Learning 2005.
3. Uday Kumar Haldar -Leadership and Team Buildingl Oxford Higher Education 2010
4. Richard L Hughes, Robert C Ginnett, Gordon J Curphy -Leadrshipl Tata Mc Graw Hill Education Private Limited 2012.

Performance Evaluation & Compensation Management

Unit- I:

Introduction: –Definition –concerns-scope-Historical developments in performance management-Over view of performance management-Process for managing performance-Importance –Linkage of PM to other HR processes-Performance Audit.

Unit- II:

Performance Management Planning: Introduction-Need-Importance-Approaches-The Planning Process—Planning Individual Performance- Strategic Planning –Linkages to strategic planning-Barriers to performance planning-Competency Mapping-steps-Methods.

Unit-III:

Management System: objectives – Functions- Phases of Performance Management System-Competency, Reward and Electronic Performance Management Systems-Performance Monitoring and Counselling: Supervision- Objectives and Principles of Monitoring- Monitoring Process- Periodic reviews- Problem solving- engendering trust-Role efficiency- Coaching-Counselling and Monitoring- Concepts and Skills .

UNIT -IV:

Compensation: concept and definition – objectives and dimensions of compensation program – factors influencing compensation –Role of compensation and Reward in Modern organizations Compensation as a Retention strategy- aligning compensation strategy with business strategy - Managing Compensation: Designing a compensation system – internal and external equity– pay determinants - frame work of compensation policy - influence of pay on employee attitude and behaviour - the new trends in compensation management at national and international level.

UNIT V:

Compensation Structure: Compensation Structure -History and past practices, elements of ,management compensation –Types of compensation system-Performance based and Pay based structures-Designing pay structures-comparison in evaluation of different types of pay structures-Significance of factors affecting-Tax Planning –Concept of Tax planning-Role of tax planning in compensation benefits-Tax efficient compensation package-Fixation of tax liability salary restructuring.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References

1. Prem Chadha: —Performance Managementl, Macmillan India, New Delhi,2008.
2. Michael Armstrong & Angela Baron, –Performance Managementl: The New Realities, Jaico Publishing House, New Delhi, 2010.
3. T.V.Rao, –Appraising and Developing Managerial Performancel, Excel Books, 2003.
4. David Wade and Ronad Recardo, –Corporate Performance Managementl, Butter Heinemann, New Delhi, 2002.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Human Capital Management

Unit I:

Economic theories of Human Capital: Nature and Role of Human Capital; The Human Capital Model; Predictions of Human Capital Approach; Socio-economic relevance of labour problems in changing scenario; Evolution of organized labour; Industrialization and Development of Labour Economy; Growth of Labour Market in India in the globalised stetting.

Unit II:

Accounting Aspects of Human Capital – Cost Based Models: Meaning, Basic Premises, Need and Significance of HRA, Advantages and Limitation of HRA; Monetary and Non-Monetary Models; Cost Based Models- Acquisition Cost Method, Replacement Cost Model, Opportunity Cost Method, standard cost method, Current Purchasing Power Method (C.P.P.M.); Comparison of Cost incurred on Human capital and the contributions made by them in the light of productivity and other aspects.

Unit III:

Accounting Aspects of Human Capital – Value Based Models: Value Based Models - Hermanson'sUnpurchased Goodwill Method, Hermanson's Adjusted Discount Future Wages Model, Lev and Schwartz Present Value of Future Earnings Model, Flamholtz's Stochastic Rewards Valuation Model, Jaggi and Lau's Human Resource Valuation Model, Robbinson's Human Asset Multiplier Method, Watson's Return on Effort Employed Method, Brummet, Flamholtz and Pyle's Economic Value Method of Group Valuation, Morse's Net Benefit Method; Recent developments in the field of Human Asset/Capital Accounting.

Unit IV:

Quality of Work Life: Workers' Participation in Management - Worker's Participation in India, shop floor, Plant Level, Board Level- Quality Circles. Workers' education objectives - Rewarding. Employees Engagement and Empowerment-nature-types-drivers-benefits-measurement of Engagement-Empowerment.

Unit V:

Industrial Accidents and safety: meaning and definition of accident-types of industrial accidents-cost and consequences-causes and prevention of accidents- Industrial safety –statutory machineries for industrial safety-safety audit. Social Security: Introduction and types –Social Security in India, Health and Occupational safety programs- work place discipline –work place counselling-meaning –definition –types-advantages-characteristics of an effective counsellor.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References

1. I.L.O., Social & Labour aspects of Economic Development, Geneva
2. Report of the National Commission on Labour
3. Patterson & Schol., Economic Problems of Modern Life. Mc-Graw Hill Book Company.
4. Walter Hageabuch, Social Economics, Cambridge University Press.
5. S. Howard Patterson, Social Aspects of Industry.
6. Millis and Montgonery, Labours Progress and some Basic Labour Problems. Mc -Graw Hill Book Company.
7. Flamholtz, Eric, Human Resource Accounting, Dickenson Publishing Co., Califf.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Manpower Planning, Recruitment & Selection

Unit I

Basics of Human Resource Planning: Macro Level Scenario of Human Resource Planning- Factors affecting HRP -Concepts and Process of Human Resource Planning - Methods and Techniques of Demand Forecasting - Methods and Techniques of Supply Forecasting - Micro Level Planning.

Unit II

Manpower Planning, Human Resource Planning and Business Environment; Defining and Drawing Manpower Systems- Stocks and Flows; Human Resource Distribution Mapping and Identifying Surplus; Downsizing Strategies- Legal and voluntary framework.

Unit III

Analysis, design and evaluation of job: nature of job analysis, process, methods of collecting job data, potential problems with job analysis-job design-contemporary issues-job evaluation – process-methods.

Unit IV

Recruiting and selecting the right talent: recruitment and selection needs-recruitment process-alternative to recruitment-selection process-evaluation-barriers to effective selection-making the selection effective.

Unit V

Training and Development: Overview of training and development systems, organizing training department, training and development policies, linking training and development to company's strategy, Requisites of Effective Training, Training Needs Assessment (TNA) Designing Training and Development Programs Evaluation of Training and Development.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Prior, John, Handbook of Training and Development, Jaico Publishing House, Bombay.
2. Trvelove, Steve, Handbook of Training and Development, Blackwell Business.
3. Warren, M.W. Training for Results, Massachusetts, Addison-Wesley.
4. Craig, Robert L., Training and Development Handbook, McGraw Hill.
5. Garner, James, Training Interventions in Job Skill Development, Addison-Wesley.
6. Mathis, Jackson,Tripathy:—Human Resource Management:Asouth-Asin Perspectivel, Cengage Learning, New Delhi, 2013
7. Subba Rao P: -Personnel and Human Resource Management-Text and Casesl, Himalaya Publications, Mumbai, 2013.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna R
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Investment Analysis & Portfolio Management

Objective: To enlighten the students with the Concepts and Practical applications of Security Analysis and Portfolio Management

Unit-I: Concept of Investment, Investment Vs Speculation, and Security Investment Vs Non-security Forms of Investment-Investment Environment in India. Investment Process - Sources of Investment Information, Security Markets – Primary and Secondary – Types of securities in Indian Capital Market, Market Indices. Calculation of SENSEX and NIFTY.

Unit-II: Return and Risk – Meaning and Measurement of Security Returns. Meaning and Types of Security Risks: Systematic Vs Non-systematic Risk. Measurement of Total Risk - Intrinsic Value Approach to Valuation of Bonds - Preference Shares and Equity Shares.

Unit-III: Fundamental Analysis – Economy, Industry and Company Analysis, Technical Analysis – Concept and Tools and Techniques Analysis – Technical Analysis Vs Fundamental Analysis - Efficient Market Hypothesis; Concept and Forms of Market Efficiency.

Unit-IV: Elements of Portfolio Management, Portfolio Models – Markowitz Model, Efficient Frontier and Selection of Optimal Portfolio. Sharpe Single Index Model and Capital Asset Pricing Model, Arbitrage Pricing Theory.

Unit-V: Performance Evaluation of Portfolios; Sharpe Model – Jensen's Model for PF Evaluation, Evaluation of Mutual Fund.

Suggested Readings:

1. Fisher DE and Jordon RJ, Security Analysis and Portfolio Management,PHI, New Delhi
2. Ambika Prsasad Dash, Security Analysis and Portfolio Management,IK Int Pub House, New Delhi
3. Hirt and Block, Fundamentals of Investment Management, TataMcGrawHill, New Delhi
4. Reily Frank K, Investment Analysis and Portfolio Management,Cengage, New Delhi
5. Bodie,Kane,Marcus and Mohanty, Investments, TataMcGraw Hill, New Delhi

Managing Banks & Financial Institutions

Unit – I: Financial System in India: Introduction - Evolution of Banking - Phases of development - RBI and the Financial System - Committees on Banking Sector Reforms - Prudential Banking -- RBI Guidelines and directions.

Unit – II: Organization, Structure and Functions of RBI and Commercial Banks: Introduction - Origination, Structure and Functions of RBI and Commercial Banks - Role of RBI and Commercial Banks - Lending and Operation policies - Banks as Intermediaries - NBFCs - Growth of NBFCs - FDI in Banking Sector - Banking Regulations - Law and Practice.

Unit – III: Risk Management in Banks : Introduction - Asset/Liability Management Practices - Credit Risk Management - Credit Risk Models - Country Risk Management - Insurance Regulations and Development Authority (IRDA).

Unit – IV: Financial Institutions and Development Banking : Introduction - Origin, Growth and Lending Policies of Terms lending Institutions - Working of IDBI - IFCI - STCs - SIDBI - LIC - GIC - UTI - Role of Financial Institutions in Capital Market.

Unit – V: New Financial Instruments and Institutions : Private Banks - Old generation and New generation private banks - Foreign Banks - NSE - Depositories - DFHI - New Equity and Debt Instruments - SEBI and RBI guidelines.

Suggested Readings:

1. Koch W Timothy and Scott S Macdonald, "Bank Management" Thomson (South-Western), Bangalore 2005 (Text Book)

2. Khan M Y., "Indian Financial System", Tata Mc Graw Hill, New Delhi, 2004

3. Srivastava, RM ., "Management of Indian Financial Institutions", Himalaya Publishing House, Mumbai, 2005

4. Avadhani V A., "Investments and Securities Markets in India", Himalaya Publishing House, Mumbai, 2004

Financial Markets & Services

Objective: To enlighten the students with the Concepts and Practical dynamics of Financial Markets and Financial Services

UNIT – I : Structure of Financial System – role of Financial System in Economic Development – Financial Markets and Financial Instruments – Capital Markets – Money Markets – Primary Market Operations – Role of SEBI – Secondary Market Operations – Regulation – Functions of Stock Exchanges – Listing – Formalities – Financial Services Sector Problems and Reforms.

UNIT – II : Financial Services: Concept, Nature and Scope of Financial Services – Regulatory Frame Work of Financial Services – Growth of Financial Services in India – Merchant Banking – Meaning-Types – Responsibilities of Merchant Bankers – Role of Merchant Bankers in Issue Management – Regulation of Merchant Banking in India. Leasing – types of Leases – Evaluation of Leasing Option Vs. Borrowing.

UNIT – III : Venture Capital – Growth of Venture Capital in India – Financing Pattern under Venture Capital – Legal Aspects and Guidelines for Venture Capital. Factoring, Forfeiting and Bill Discounting – Types of Factoring Arrangements – Factoring in the Indian Context.

UNIT – IV : Credit Rating – Meaning, Functions – Debt Rating System of CRISIL, ICRA and CARE. Mutual Funds – Concept and Objectives, Functions and Portfolio Classification, Organization and Management, Guidelines for Mutual Funds. Working of Public and Private Mutual Funds in India. Debt Securitization – Concept and Application – De-mat Services-need and Operations-role of NSDL and CSDL.

UNIT – V : Microfinance: Over view of Microfinance, Indian Rural financial system, introduction to Microfinance, Microfinance concepts, products, (savings, credit, insurance, pension, equity, leasing, hire-purchase service, Microfinance in kind, Micro-remittances, MicroSecuritization. Microfinance models: Generic models viz. SHG, Grameen, and Co-operative, variants SHG NABARD model, SIDBI model, SGSY model, Grameen Bangladesh model, credit unions. Poverty and Need of Microfinance. Gender issues in Microfinance

Suggested Readings:

1. Bhole & Mahakud, Financial Institutions and Market, TMH, New Delhi
2. V.A.Avadhani, Marketing of Financial Services, Himalayas Publishers, Mumbai
3. DK Murthy, and Venugopal, Indian Financial System, IK Int Pub House
4. Anthony Saunders and MM Cornett, Fin Markets & Institutions,TMH,
5. Edminister R.D., Financial Institution, Markets and Management.

Taxation

Objective: To acquaint the students with the theoretical and practical aspects of direct taxes including wealth taxes.

Unit –I: General Principles of Tax – Direct and Indirect Taxes – State Power to Levy Tax – Tax System – Provisions of Income Tax Act 1961 – Finance Act – Basic Concepts.

Unit- II: Income Tax – Deductions, Computation, Payment and Accounting- deductions from Gross Total Income, Rebates and Reliefs and Computation of Taxable Income and Tax Payable, Filing of Income Tax Returns – Provisions, Forms and Due Dates, Notices and Assessments.

Unit III: Tax Planning for Firms, HUFs and AOPs- partnership firm under Income Tax Law, tax deductions available to firms, Provisions relating to interest and remuneration paid to partner, Computation of partnership firms' book profit, Set-off and carry-forward of losses of Firms and taxation of HUFs and Associations of Persons (AOPs).

Unit IV: Corporate Taxation- Computation of taxable income, Carry-forward and set-off of losses for companies, Minimum Alternative Tax (MAT), Set-off and Carry-forward of Amalgamation Losses, Tax Planning for Amalgamation, Merger and Demerger of Companies, Tax Provisions for Venture Capital Funds

Unit V: Tax Audit and Accounting for Income Tax - Tax Audit, Qualities and Qualifications Required in Tax Auditors, Forms, Reports and Returns and Tax Reporting and Disclosure in Financial Statements

Suggested Readings:

1. Dr. V.K. Singhania & Dr. Kapil Singhania, Direct Taxes Law and Practice, Taxman Publications Pvt. Ltd., New Delhi.

2. Bhagavati Prasad, Direct Taxes Law and Practice, Wishwa Prakashan, New Delhi.

3. Dinkar Pagare, Income Tax and Practice, Sultan Chand and Sons, New Delhi.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Consumer Behavior

Course Objective

To make the students to understand what consumer behaviour is and the different types of Consumers and the relationship between consumer behavior and customer value, satisfaction, trust and retention

Unit – I

Introduction to Consumer Behaviour: Consumer Behaviour – Definition, Consumer and Customers, Buyers and Users, Organisations as Buyers, Development of Marketing Concept, Consumer Behaviour and its Applications in Marketing, Consumer Behaviour and Marketing Communications: Introduction, Marketing Communication Flow, Communications Process, Interpersonal Communication, Persuasive Communications,

Unit – II

Marketing Segmentation and Positioning: Introduction, Requirements for Effective Segmentation, Bases for Segmentation, Product Positioning: An Introduction, Positioning Strategy, Positioning Approaches, Positioning Errors

Consumer Motivation: Introduction, Needs and Goals, motivational Conflict, Defense Mechanisms, Motive Arousal, Motivational Theories, Maslow's hierarchy of needs

Unit – III

Situational Influence on Consumer's Decision and the Decision Models: Introduction, Nature of Situational Influence, Situational Variables, Types of Consumer Decisions, Nicosia Model of Consumer Decision-making (Conflict Model), Howard-Sheth Model (also called Machine Model), Engel, Blackwell, Miniard Model (also called Open System)

Unit – IV

Consumer Personality: Introduction, Self-concept, personality Theories, Brand Personality, emotions Consumer Perception: Introduction, Sensation (Exposure to Stimuli), Perceptual Selection, Perceptual Organisation, Factors that Distort Individual Perception, Price Perceptions, Perceived Product and Service Quality, Consumer Risk Perceptions

Unit – V

Consumer Decision-making Process – Problem Recognition, Information Search and Evaluation of Alternatives: Introduction, Problem Recognition, Information Search, Evaluation of Alternatives. Outlet Selection, Purchase and Post Purchase Behaviour, Introduction, Outlet Selection and Purchase, Post Purchase Behaviour

Suggested References:

1. Ramneek Kapoor, Nnamdi O Madichie: –Consumer Behaviour Text and Casesl, TMH, New Delhi, 2012.
2. Ramanuj Majumdar: –Consumer Behavior insight from Indian Marketl, PHI Learning, New Delhi, 2011.

Retail Management

Course Objective:

Objective of retail management is creating and developing services and products that meet the specific needs of customers and offering these products at competitive, reasonable prices that will still yield profits.

Unit – I

Introduction to Retailing: Introduction, Meaning of Retailing, Economic Significance of Retailing, Retailing Management Decision Process, Product Retailing vs. Service Retailing, Retailing Marketing Environment: Elements in a Retail Marketing Environment, Environmental Issues, , Indian vs. Global Scenario

Unit – II

The Retail Marketing Segmentation: Introduction, Importance of Market, Segmentation in Retail, Targeted Marketing Efforts, Criteria for Effective Segmentation, Dimensions of Segmentation, Positioning Decisions , Limitations of Market Segmentation

Store Location and Layout: Introduction, Types of Retail Stores Location, Factors Affecting Retail Location Decisions, Country/Region Analysis, Trade Area Analysis, Site Evaluation, Site Selection, Location Based Retail Strategies

Unit – III

Store Location and Layout: Introduction, Target Market and Retail Format, Gauging Growth Opportunities, Building a Sustainable Competitive Advantage, the Strategic Retail Planning Process, Differentiation Strategies, Positioning Decisions,

Retail Pricing- Introduction, Establishing Pricing Policies, Factors Influencing Pricing, Pricing Strategies, Psychological pricing, Mark-up and Mark-down Pricing

Unit – IV

Customer Relationship Management in Retailing-Introduction, Benefits of Relationship Marketing, Management of Relationship, Principles of CRM, Customer Relationship Management Strategies, Components of CRM, Customer Service in Retailing, CRM and Loyalty Program

Understanding Integrated Marketing Communication, - Integrated marketing process, Tools of IMC, Upcoming tools of IMC, Factors influencing the Increased use of sales promotion

Unit – V

International Retailing- Introduction, Stages in Retail Global Evolution, Reasons for Going Global, Benefits of Going Global, Other Opportunities and Benefits of Going Global, Market Entry Methods

Suggested References:

1. Sheikh and Kaneez Fatima, -Retail Managementl, Himalaya Publishing House, Mumbai, 2012
2. A.J. Lamba:lThe Art of Retailingl, Tata McGraw Hill Education Pvt. Ltd. N. Delhi.2011

Customer Relationship Management

13

Course Objective

- To provide a conceptual understanding of CRM, its processes, and structure.

Unit – I

Customer Relationship Management Fundamentals: Definition and Significance of Customer Relationship Marketing, Theoretical perspectives of relationship, Evolution of Relationship marketing, Stages of relationship, Issues of relationship, Purpose of relationship marketing, Approach towards marketing: A paradigm shift, Historical Perspectives, CRM Definitions, Emergence of CRM practice, CRM cycle, Significance of CRM, CRM Strategy, Customer Life Time Value, Relationship Life Cycle.

Unit – II

Building Customer Relationship Management: Requisites for Effective Customer acquisition, Customer Knowledge Management for Effective CRM, Customer Retention Process, Strategies to Prevent Defection and Recover Lapsed Customers , CRM Implementation: CRM framework for Implementation, Implementing CRM process, Integration of CRM with ERP System, Barriers to effective CRM Gartner's Competency model of CRM.

Unit – III

Functional Components of CRM: Database Management: Database Construction, Data Warehousing, architecture, Data Mining. Characteristics, Data Mining tools and techniques, Meaning, Significance, Advantages, Call Center, Multimedia Contact Center, Important CRM software's

Unit – IV

Sales Force Automations (SFA): Definition and need of Sales Force Automation, barriers to successful Sales Force Automation functionality, technological aspect of Sales Force Automation, data synchronization, flexibility and performance, reporting tools, Impact of CRM on Marketing Channels: Meaning, how does the traditional distrib tion channel structure, support customer relationship, emerging channel trends that impact CRM

Unit – V

Trends and Issues in CRM: CRM in e- business (B2B & B2C), Measuring the Effectiveness of CRM, Factors Influencing the future of CRM. E-CRM in Business, CRM: A changing Perspective, Features of e-CRM, Advantages of e-CRM,

Recommended Books

Text Books:

1. Alok Kumar, Chabbi Sinha & Rakesh Kumar, Customer Relationship Management: Concepts & Application Biztantra, Delhi, 2007

2. H Peeru Mohamed, A Sagadevan, Customer Relationship Management- A Step-by-Step Approach, Vikas Publishing House Pvt. Ltd., Delhi, 2008

Course Objective:

To understand the various components of Business environment and to device strategies to face global competition.

Unit – I

Introduction to Strategic Marketing Management: Strategic marketing process. Concept of strategic marketing. Levels of Strategies-Corporate, Business and Operational level.
Strategy Formulation – Vision, Mission, Objectives and Goals of business and their relationship with Strategic Marketing Management. Considerations for formulation of marketing strategies for all components of Product, Price, Promotion and Distribution.

Unit – II

Corporate restructuring and strategy evaluation: Introduction to corporate restructuring, need for corporate restructuring and its forms. Evaluation of strategic alternatives, types of strategic alternatives like portfolio analysis and its techniques.
Model as basic foundation of Strategic Marketing - McKinsey's 7s framework for analyzing and improving organizational effectiveness.

Unit – III

Marketing Strategy Implementation – Integration of Marketing Strategies and their application to different business sectors – FMCG, Industrial, & Services. Constraints in marketing strategy implementation.

Unit – IV

Marketing Strategy Evaluation: Marketing Audits & their scope – Measurement of Marketing Performance and its feedback to next year's Marketing strategy formulation. Economic losses due to disasters-Issues and Strategies for preventing disasters and preparedness measures.

Unit – V

Recent trends in strategic marketing management - Eco-friendly strategies. Growing need of public private partnership. Corporate Social Responsibility (CSR), strategies of linking CSR with profit and sustainability.

Recommended Books

Text Books:

1. Thompson/Strickland, Strategic Management : Concepts and Cases, McGrawHill Companies; 11th edition
2. David Hunger and Thomas L. Wheelen "Strategic Management" AddisonWesley; 6 Sub edition.

Suggested Reading

1. William F. Glueck, Business Policy and Strategic Management, McGraw-Hill
2. Azhar Kazmi, Strategic Management and Business Policy, Third Edition

Services Marketing

Objectives:

- To explain why there is a need for special services marketing discipline; the challenges for services marketing; and how to deal with them.

- To acquaint the students with elements of services marketing mix, ways to manage the service delivery process and strategies to effectively implement Services marketing.

Unit – I

Introduction to Services Marketing: Understanding Services, Differences in Goods versus Services, Emerging Service Environment, Classification of Services. Service Market Segmentation, Targeting & Positioning: Process of market segmentation, customer loyalty Segmentation, Targeting and Positioning service value addition to the service product, planning and branding service products, new service development.

Unit – II

Pricing strategies for services: Service pricing, establishing monetary pricing objectives foundations of pricing objectives, pricing and demand, putting service pricing strategies into practice.

Service promotion: The role of marketing communication. Implication for communication strategies, setting communication objectives, marketing communication mix.

Unit – III

Implementing Services Marketing: Improving Service Quality and Productivity, SERVQUAL, Service Failures and Recovery Strategies. Customer Relationship Marketing:

Relationship Marketing, the nature of service consumption understanding customer needs and expectations, Strategic responses to the intangibility of service performances.

Unit – IV

Managing Service Delivery Process: Managing Physical Evidence of Services, Designing and Managing Service Processes, Managing People for Service Advantage.

Unit – V

Marketing of Services in Sectors: Financial Services, Health Service, Hospitality Services including travel, hotels and tourism, Professional Service, Public Utility Services, Educational Services.

Recommended Books

Text Books:

1. Valarie A. Zeithaml & Mary Jo Bitner - Services Marketing: Integrating Customer Focus Across The Firm, Third Edition, 2004; Tata McGraw-Hill Publishing Company Ltd, 2008.

2 Christopher H. Lovelock, Jochen Wirtz, Jayanta Chatterjee, Services Marketing: People, Technology, Strategy (A South Asian Perspective) Fifth Edition 2011; Pearson Education

Promotional & Distribution Management

Course Objective:

To provide an understanding about the relevance of marketing communication, promotion activities and management of distribution networks.

Unit – I

Marketing Communications: The nature of marketing communications. The integration of marketing communication. Integrated marketing communication planning process. Model of marketing communications decision process. Establishing objectives and budgeting for the promotional programme.

Unit – II

Developing Integrated Marketing Communications: Creative strategy development. Process of execution of creative strategy: Appeals, execution styles and creative tactics. Media planning & Strategy: Developing Media Plans & Strategies and Implementation with IMC perspective.

Unit – III

Personal Selling: Role of personal selling in IMC programme. Integration of personal selling with other promotional tools. Personal selling process and approaches. Evaluating, motivating and controlling sales force effort.

Unit – IV

Sales Promotion and Support media: Sales Promotion - objectives, consumer and trade oriented sales promotion. Developing and operating sales promotion for consumers & trade: Sales promotion tools: off - shelf offers, price promotions, premium promotions, prize promotions. Coordinating Sales promotions and advertisement. Support media – Elements of Support media and their role. Direct marketing, the internet & Interactive Marketing, publicity and public relations. Monitoring, evaluating & controlling promotion programme.

Unit – V

Distribution Management: Role and functions of channels of distribution. Distribution Systems. Distribution cost, control and customer service. Channel design, and selection of channels, selecting suitable channel partners. Motivation and control of channel members. Distribution of Services, market logistics & supply chain management.

Suggested Readings:

1. Shimp -Advertising and Promotionl, 2007, Cengage Learning.
2. George E Belch, Micheal A Belch & Keyoor Purani —Advertising and Promotionl, 2010, Tata McGraw Hills, 7th Ed.
3. Shah & D'souza -Advertising & Promotionl, 2010, Tata McGraw Hills.

Advertising & Brand Management

Course Objective:

Expose the students to the dynamism of advertising and brand management and equip them to be able to manage the advertising and branding activities in the business scenario.

Unit – I

Advertising: Its importance and nature; Communication model; Persuasion Process –perception, learning and attitude change; Major advertising decisions and influencing factors; Determining advertising Objectives and budget.

Unit – II

Developing Advertising Campaign: Determining advertising message and copy - Headline, body copy, logo, illustration and layout; Creative styles and advertising appeals; Media planning – media selection and scheduling Advertising through Internet.

Unit – III

Organisation and Evaluation of Advertising Efforts: In-house arrangements; Using advertising agencies – selection, compensation and appraisal of advertising agency; Evaluating Advertising Effectiveness. Importance of branding; Basic Branding concepts – Brand personality, brand image, brand identify, brand equity and brand loyalty; Product vs. Corporate branding: Major branding decisions.

Unit – IV

Identifying and selecting brand name Building brand personality, image and identity; Brand positioning and re-launch; Brand extension; Brand portfolio; communication for branding Enhancing brand image through sponsorship and even management.

Unit – V

Managing Brand Equity and Loyalty: Brand Building in Different Sectors - Customers, industrial, retail and service brands. Building brands through Internet. Developing International Brands: Pre-requisites and process; Country-of-origin effects and global branding; Building Indian brands for global markets.

Suggested Readings:

1. S.H.H Kazmi and SatishK.Batra : Advertising and sales promotion, Excel books Cowley. D: Understanding Brands, ,Kogan Page Ltd

2. George E.Belch& Michael A. Balch : Advertising and Promotion, TMH

Global Marketing Management

Course Objective:

To enhance the concepts among the students about free trade at global level and attempt to bring all the countries together for the purpose of trading.

To increase the conception of globalization by integrating the economies of different countries, enabling them to understanding the world peace by building trade relations among different nations.

Unit – I

Global Marketing: Scope and Significance of Global Marketing, The importance of global / international marketing, Differences between international and domestic marketing International environment, International Social & culture Environment, the political legal environment and regulatory environment of international marketing. Technological Environment.

Unit – II

Global Market Entry Strategies: Indirect Exporting, Domestic Purchasing, Direct Exporting, Foreign Manufacturing Strategies without Direct Investment, Foreign Manufacturing Strategies with Direct Investment. Entry Strategies of Indian Firms.

Unit – III

Global product management: International product positioning, Product saturation Levels in global Market, International product life cycle, Geographic Expansion–Strategic Alternatives. New products in Intentional Marketing, Product and culture, brands in International Market.

Unit – IV

International Marketing Channels: channels –Distribution Structures, Distribution Patterns, Factors effecting Choice of Channels, the Challenges in Managing an international Distribution Strategy Selecting Foreign Country Market intermediaries. The management of physical distribution of goods, Advertising and Branding, Grey Market goods.

Unit – V

Export Marketing: Introduction to Export Marketing, Export Policy Decisions of a firm, EXIM policy of India. Export costing and pricing, Export procedures and export documentation. Export assistance and incentives in India.

Suggested Readings :

1. Varshney and Bhattacharya:International Marketing management.
2. Philip Kotler:Marketing Management
3. John Fayerwearther:International Marketing

Financial Derivatives

Objective: To enlighten the students with the concepts and practical applications of derivatives in the security markets.

Unit - I: Introduction to Financial Derivatives – Meaning and Need – Growth of Financial Derivatives in India – Derivative Markets – Participants- Functions – Types of Derivatives – Forwards – Futures – Options-Swaps – The Regulatory Framework of Derivatives Trading in India.

Unit - II: Features of Futures –Differences Between Forwards and Futures – Financial Futures – Trading – Currency Futures – Interest Rate Futures – Pricing of Future Contracts- Value at Risk (VaR)-Hedging Strategies – Hedging with Stock Index Futures – Types of Members and Margining System in India – Futures Trading on BSE & NSE.

Unit - III: Options Market – Meaning & Need – Options Vs Futures -Types of Options Contracts – Call Options – Put Options- Trading Strategies Involving Options – Basic Option Positions – Margins – Options on Stock Indices – Option Markets in India on NSE and BSE.

Unit - IV: Option Pricing – Intrinsic Value and Time Value- Pricing at Expiration – Factors Affecting Options pricing- Put-Call Parity Pricing Relationship- Pricing Models - Introduction to Binominal Option Pricing Model – Black Scholes Option Pricing Model.

Unit – V: Swaps – Meaning – Overview – The Structure of Swaps – Interest Rate Swaps – Currency Swaps – Commodity Swaps – Swap Variant – Swap Dealer Role –Equity Swaps – Economic Functions of Swap Transactions - FRAs and Swaps.

Suggested Readings:

1. Hull C. John, –Options, Futures and Other Derivatives‖, Pearson Educations Publishers,
2. David Thomas. W & Dubofsky Miller. Jr., Derivatives valuation and Risk Management, Oxford University, Indian Edition.
3. ND Vohra & BR Baghi, Futures and Options, Tata McGraw-Hill Publishing Company Ltd.
4. Red Head: Financial Derivatives: An Introduction to Futures, Forward, Options‖ Prentice Hall of India.
5. David A. Dubofsky, Thomas W. Miller, Jr.: Derivatives: Valuation and Risk Management, Oxford University Press.
6. Sunil K.Parameswaran, –Futures Markets: Theory and Practice‖ Tata-McGraw-Hill Publishing Company Ltd.
7. D.C. Patwari, Financial Futures and Options, Jaico Publishing House.
8. T.V. Somanathan, Derivatives, Tata McGraw-Hill Publishing Company Ltd.
9. NSE Manual of Indian Futures & Options & www. Sebi.com
10. S.C. Gupta, Financial Derivatives: Theory, Concepts and Problems, Prentice Hall of India.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Global Financial Management

Objective: to enlighten the students with the Concepts and Practical applications of Gobal Financial Management.

Unit I : International Monetary and Financial System: Evolution; Breton Woods Conference and Other Exchange Rate Regimes; European Monetary System, South East Asia Crisis and Current Trends.

Unit II : Foreign Exchange Risk: Transaction Exposure; Accounting Exposure and Operating Exposure – Management of Exposures – Internal Techniques, Management of Risk in Foreign Exchange Markets: Forex Derivatives – Swaps, futures and Options and Forward Contracts.

Unit III : Features of Different International Markets: Euro Loans, CPs, Floating Rate Instruments, Loan Syndication, Euro Deposits, International Bonds, Euro Bonds and Process of Issue of GDRs and ADRs.

Unit IV : Foreign Investment Decisions : Corporate Strategy and Foreign Direct Investment; Multinational Capital Budgeting; International Acquisition and Valuation, Adjusting for Risk in Foreign Investment.

Unit V: International Accounting and Reporting; Foreign Currency Transactions, Multinational Transfer Pricing and Performance Measurement; Consolidated Financial Reporting.

Suggested Readings:

1. Buckley Adrin, Multinational Finance, 3rd Edition, Engle Wood Cliffs, Prentice Hall of India.
2. S.P.Srinivasan, B.Janakiram, International Financial Management, Wiley India, New Delhi.
3. Clark, International Financial Management, Cengage, ND
4. V.Sharan, International Financial Management, 3rd Edition, Prentice Hall of India.
5. A.K.Seth, International Financial Management, Galgothia Publishing Company.
6. P.G.Apte, International Financial Management, Tata McGrw Hill, 3rd Edition.
7. Bhalla, V.K., International Financial Management, 2nd Edition, New Delhi, Anmol, 2001.
8. V.A.Avadhani, International Financial Management, Himalaya Publishing House.

Bhalla, V.K., Managing International Investment and Finance, New Delhi, Anmol, 1997.

Strategic Financial Management

Objective: To enlighten the students with the Concepts and Practical applications of Strategic Financial Management., with particular reference to the financial strategy and value of the enterprise.

Unit-1: Financial Goals and Strategy – Shareholder Value Creation (SCV): Market Value Added (MVA) – Market-to-Book Value (M/BV) – Economic Value Added (EVA) – Managerial Implications of Shareholder Value Creation.

Unit-II: Financial Strategy for Capital Structure: Leverage Effect and Shareholders' Risk – Capital Structure Planning and Policy – Financial Options and Value of the Firm – Dividend Policy and Value of the Firm.

Unit-III: Investment Strategy – Techniques of Investment Appraisal Under Risk and Uncertainty – Risk Adjusted Net Present Value – Risk Adjusted Internal Rate of Return – Capital Rationing – Decision Tree Approach for Investment Decisions – Evaluation of Lease Vs Borrowing Decision.

Unit-IV: Merger Strategy – Theories of Mergers – Horizontal and Conglomerate Mergers – Merger Procedure – Valuation of Firm – Financial Impact of Merger – Merge and Dilution Effect on Earnings Per Share – Merger and Dilution Effect on Business Control.

Unit-V: Takeover Strategy – Types of Takeovers – Negotiated and Hostile Bids – Takeover Procedure – Takeover Defenses – Takeover Regulations of SEBI – Distress Restructuring Strategy – Sell offs – Spin Offs – Leveraged Buyouts.

Suggested Readings:

1. Van Horn, JC, Financial Management and Policy, Prentice Hall,New Delhi
2. PG Godbole, Mergers, Acquisitions and Corporate Restructuring, Vikas, New Delhi
3. Weaver, Strategic Corporate Finance, Cengage, ND
4. Weston JF, Chung KS & Heag SE., Mergers, Restructuring & Corporate Control, Prentice Hall.
5. GP Jakarthiya, Strategic Financial Management, Vikas, New Delhi
6. Coopers & Lybrand, Strategic Financial: Risk Management, Universities Press (India) Ltd.
7. Robicheck, A, and Myers, S., Optimal Financing Decisions, Prentice Hall Inc.
8. James T.Gleason, RiskL The New Management Imperative in Finance, A Jaico Book.

Behavioral Finance

Objective: To help students appreciate the limitations of _rational' models of investment decision making; To introduce students to an alternate framework for understanding price discovery in the markets; and to help students identify persistent or systematic behavioral factors that influence investment behavior

Unit – I Introduction to Behavioral finance – Nature, scope, objectives and application; Investment Decision Cycle: Judgment under Uncertainty :Cognitive information perception - Peculiarities (biases) of quantitative and numerical information perception - Weber law - Subjective probability – Representativeness – Anchoring - Asymmetric perception of gains and losses framing and other behavioral effects - Exponential discounting - Human economic behavior - Discount factors for short and long horizons - Experimental measurement of the discount factor - Hyperbolic discounting.

Unit – II: Utility/ Preference Functions: Expected Utility Theory [EUT] and Rational Thought: Decision making under risk and uncertainty - Expected utility as a basis for decision-making – Theories based on Expected Utility Concept – Decisionmaking in historical prospective - Allais and Elsberg's Paradoxes - Rationality from an economics and evolutionary prospective – Herbert Simon and bounded rationality- Investor rationality and market efficiency - Empirical data that questions market efficiency.

Unit –III: Behavioral Factors and Financial Markets: The Efficient Markets Hypothesis – Fundamental Information and Financial Markets - Information available for Market Participants and Market Efficiency -Market Predictability –The Concept of limits of Arbitrage Model - Asset management and behavioral factors - Active Portfolio Management: return statistics and sources of systematic underperformance. - Fundamental information and technical analysis – the case for psychological influence.

Unit – IV: Behavioral Corporate Finance: Behavioral factors and Corporate Decisions on Capital Structure and Dividend Policy - Capital Structure dependence on Market Timing - Mergers and Acquisitions. Systematic approach to using behavioral factors in corporate decisionmaking. External Factors and Investor Behavior: Mechanisms of the External Factor influence on risk perception and attitudes - Connection to human psychophysiology and emotional regulation Active portfolio management – the source of the systematic underperformance.

Unit – V: Emotions and Decision – Making: Experimental measurement of risk-related - Measuring Risk - Emotional mechanisms in modulating risk-taking attitude - Neurophysiology of risktaking. Personality traits and risk attitudes in different domains.

Suggested Readings:

1. Behavioral Finance: Psychology, Decision-Making, and Markets", by Ackert and Deaves. The Psychology of Investing by John R.
2. Understanding Behavioral Finance by Ackert Nofsinger, Pearson Prentice Hall, (4th Edition)
3. What Investors Really Want - Learn the lessons of behavioral Finance, Meir Statman, McGraw-Hill
4. Handbook of Behavioral Finance – Brian R. Bruce
5. Behavioral finance - Wiley Finance - Joachim Goldberg, Rüdiger von Nitzsch
6. Plous, Scott, 1993, The Psychology of Judgment and Decision Making, Ch 10-15

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Labor Welfare & Employment Laws

UNIT I:

Labour Welfare: Concept, scope and philosophy, principles and approaches of labour welfare, Indian constitution on labour, Agencies of labour welfare and their role. Impact of ILO on labour welfare in India.

UNIT II:

Labour welfare programmes: Statutory and non-statutory, extra mural and intra mural, Central Board of Workers' Education; Workers' Cooperatives- Welfare Centres -Welfare Officers' Role, Status and Function, Signs of poor welfare.

UNIT III:

Labour Legislation: Objectives-Principles-Classification-Evaluation of Labour legislation in India- Factories Act 1948, Definitions - Objectives of Act - Factory Inspectorate: – Measures to be taken by Factories for Health, Safety and Welfare of Workers - Working Hours - Wage and Compensation - Provisions Relating to Hazardous Processes - Annual Leave with Wages - Special Provisions - Obligations by Employer and Employee - Offences and Penalties., Contract Labour (Regulation and Abolition) Act 1970 and A.P.Shops and Establishments Act.

UNIT IV:

Industrial Relations Legislation: Industrial Disputes Act 1947Concept, objectives, Types of Strikes and their Legality – Authorities under the Act and their Duties – Voluntary Reference of Disputes to Arbitration – Types of Strikes and Lock-outs Wages for Strike and Lock-out Period– Change in Conditions of Service. Industrial Employment (standing orders) Act 1946 Certification of Draft Standing Orders – Appeals – Date of Operation of Standing Orders – Posting of Standing Orders – Payment of Subsistence Allowance.

UNIT V:

Trade Unions Act 1926. Definitions - Scope and Significance – Characteristics - Types of Trade Unions - Reasons for Joining Trade Unions - Advantages and Disadvantages of Trade unions- Legislations of Trade Unions- Rights and Privileges. Wage and Social Security Legislation: Payment of wages Act 1936 - Minimum wages Act 1948 - Payment of Bonus Act 1966 -. Payment of Gratuity Act 1972 - Workmen's Compensation Act 1923 - Employees State Insurance Act 1948 - Maternity Benefit Act 1961 and Employees Provident Fund and Miscellaneous Provisions Act 1952.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Govt. of India (Ministry of Labour, 1969). Report of the Commission on Labour Welfare, New Delhi: Author.
2. Govt. of India (Ministry of Labour, 1983). Report on Royal Commission on Labour in India, New Delhi: Author.
3. Malik, P.L: -Industrial Lawl, Eastern Book Company. Laknow,1977

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Employee Relations & Engagement

UNIT I :

Industrial Relations Management: Concept-meaning and scope of IR-system frame work-Theoretical perspective- Evaluation –Background of industrial Relations in India- Influencing factors of IR in enterprise and the consequences. Globalization and IR- Recent Trends in Industrial Relations.

UNIT II:

Trade Unions: Introduction-Definition and objectives-growth of Trade Unions in India -Union recognition-Union Problems-Employees Association- Collective Bargaining –Characteristics-Importance-Principles-The process of CB-Participation in the bargaining process-Essential conditions for the success of collective bargaining –Negotiating techniques and skills.

UNIT III:

Employee Grievances: Causes of Grievances – Grievances Redressal Machinery – Discipline in Industry _ Measures for dealing with Indiscipline–Standing Orders- Code Discipline.

UNIT IV:

Industrial Disputes: Meaning, nature and scope of industrial disputes - Cases and Consequences of Industrial Disputes –Prevention and Settlement of industrial disputes in India.

UNIT V :

Employee Engagement : Concept-Definition-Elements- Factors- Levels - Driers of Employee Engagement-Measurement-Strategies- The role of managers in engaging the employees.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References

1. C.S Venkataratnam: -Industrial Relationsl, Oxford University Press, New Delhi, 2011
2. Sinha: -Industrial Relations, Trade Unions and Labour Legislationl, Pearson Education, New Delhi, 2013
3. Mamoria: —Dynamics of Industrial Relationsl, Himalaya Publishing House, New Delhi, 2010
4. B.D.Singh: -Industrial Relationsl Excel Books, New Delhi, 2010
5. Arun Monappa: -Industrial Relationsl, TMH, New Delhi. 2012
6. Prof. N.Sambasiva Rao and Dr. Nirmal Kumar: -Human Resource Management and Industrial Relationsl, Himalaya Publishing House, Mumbai
7. Ratna Sen: -Industrial Relationsl, MacMillon Publishers, New Delhi, 2011

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Ra
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Human Resources Development

UNIT-I:

Concept of HRD-objectives-Structure-Need-Scope- HRD in selected industrial organisations-significance-HRD functions-Framework-Techniques-Attributes of a HRD manager.

UNIT – II:

HRD Strategies:- An Overview - Strategies - Training and Development - Methods - Evaluation of training programmes. HRD Process Model: Methods of Implantation, Evaluation of HRD programmes. Identification of HRD needs and Design and development of HRD programmes.

UNIT – III:

HRD interventions: Mentoring for employee development: Concepts of Mentoring-Perspectives-Mentoring relationship-Outcomes of Mentoring programmes-Design and implementation of formal-mentoring programmes-Barriers to mentoring-Role of mentoring in development, understanding the role and responsibilities of mentor, mentee-Special issues in Mentoring.

UNIT – IV:

Employee counselling for HRD: Overview of counselling programmes, employee assistance programme, stress management, employee wellness and health promotion. Career Planning, management, and development: Career development stages and activities, role of individual and organization in career planning, Issues in career management.

UNIT-V :

The future of HRD and HRD Ethics: Research, practice and education of HRD for innovation and talent development and management, Role of HRD in developing ethical attitude and behaviour and development, Ethical problems with HRD roles. Applications of HRD: HRD Climate, HRD for managing organizational change, HRD for Workers (blue collar employees), HRD Audit.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Arun Monappa; Personnel Management;
2. Rudrabasava Raj M.N. : Dynamic Personnel Administration Management of Human Resources;
3. Udai Pareek, Human Resource Development;
4. S. Ravishankar & R.K. Mishra (Ed). : Management of Human Resources in Public Enterprises;
5. Haribson F, Educational Planning and Human Resources Development, International Institute for Education, UNESCO, Paris;
6. Bell DJ, Planning Corporate' Manpower, Longman;
7, Walker James W'. Human Resource Planning, MGH.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Ra.
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

Strategic Human Resource Management

UNIT-I

Human Resource Strategy: Introduction to Strategic Human Resource Management - Evaluation objectives and Importance of Human Resources Strategy- Strategic fit – A conceptual framework -Human Resources contribution to strategy - Strategy driven role behaviours and practices – Theoretical Perspectives on SHRM approaches - Linking business strategies to HR strategies.

UNIT-II

Strategic Human Resource Planning: Objectives, benefits, levels of strategic planning -Activities related to strategic HR Planning-Basic overview of various strategic planning models-Strategic HR Planning model-Components of the strategic plan.

UNIT-III

Strategy Implementation: Strategy implementation as a social issue-The role of Human Resource-Work force utilization and employment practices-Resourcing and Retention strategies- Reward and Performance management strategies.

UNIT-IV

Strategic Human Resource Development: Concept of Strategic Planning for HRD Levels in Strategic HRD planning-Training and Development Strategies-HRD effectiveness.

UNIT-V

Human Resource Evaluation: Overview of evaluation - Approaches to evaluation, Evaluation Strategic contributions of Traditional Areas - Evaluating Strategic Contribution of Emerging Areas-HR as a Profit centre and HR outsourcing strategy.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Charles R. Greer: -Strategic Human Resource Managementl - A General Manager Approach -Pearson Education, Asia
2. Fombrum Charles & Tichy: -Strategic Human Resource Managementl - John Wiley Sons, 1984
3. Dr. Anjali Ghanekar -Strategic Human Resource Managementl Everest Publishing House, Pune 2009

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

P.S.C.M.R.COLLEGE OF ENGINEERING AND TECHNOLOGY

APPROVED BY AICTE, NEW DELHI; AFFILIATED TO JNTU, KAKINADA

Kothapeta, Vijayawada-520001 (A. P.)

DEPARTMENT OF CIVIL ENGINEERING

1.2.1 Percentage Of new Courses introduced for the total number of courses across all programs offered during the last five years

S.NO	Name of The new course introduced in last five years	Program name	Program code	Course code	Year of introduction	Link of the relevant document
1.	Traffic Engineering	CE	01	R164101E	2018-2019	
2.	Waste Water Management	CE	01	R163201D	2018-2019	
3.	Urban Transportation Planning	CE	01	R164201E	2019-2020	
4.	Water Resources system Planning	CE	01	R164201D	2021-2022	
5.	Prestressed Concrete	CE	01	R19PE601	2021-2022	
6.	Project management	CE	01	R19OE601	2021-2022	
7.	Traffic Engineering	CE	01	R193101D	2021-2022	
8.	Waste Water Treatment	CE	01	R193101N	2021-2022	

Head of the Department

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

COURSE STRUCTURE AND SYLLABUS

For

CIVIL ENGINEERING

(Applicable for batches admitted from 2016-2017)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA - 533 003, Andhra Pradesh, India

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Management Science	4	--	--	3
2	Engineering Geology	4	--	--	3
3	Structural Analysis -II	4	--	--	3
4	Design & Drawing of Reinforced Concrete Structures	4	2	--	3
5	Transportation Engineering - II	4	--	--	3
6	Concrete Technology Lab	--	--	3	2
7	Geology Lab	--	--	3	2
8	Transportation Engineering Lab	--	--	3	2
	Total Credits				**21**

III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Design & Drawing of Steel Structures	4	2	--	3
2	Geotechnical Engineering - I	4	--	--	3
3	Environmental Engineering -I	4	--	--	3
4	Water Resource Engineering -I	4	--	--	3
5	**OPEN ELECTIVE** i. Electronic Instrumentation ii. Data Base Management Systems iii. Alternative Energy Sources iv. Waste water Management v. Fundamentals of Liquefied Natural Gas vi. Green Fuel Technologies	4	--	--	3
6	Geotechnical Engineering Lab	--	--	3	2
7	Environmental Engineering Lab	--	--	3	2
8	Computer Aided Engineering Lab	--	--	3	2
	Total Credits				**21**

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

IV Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Environmental Engineering - II	4	--	--	3
2	Water Resource Engineering - II	4	--	--	3
3	Geotechnical Engineering - II	4	--	--	3
4	Remote Sensing & GIS Applications	4	--	--	3
5	**Elective I** i. Finite Element Methods ii. Ground Improvement Techniques iii. Air Pollution & Control iv. Urban Hydrology v. Traffic Engineering	4	--	--	3
6	**Elective II** i. Advanced Structural Engineering ii. Advanced Foundation Engineering iii. Environmental Impact Assessment & Management iv. Ground Water Development v. Pavement Analysis and Design	4	--	--	3
7	IPR & Patents	--	2	--	--
8	GIS & CAD Lab	--	--	2	2
9	Irrigation Design & Drawing	--	--	2	2
	Total Credits				**22**

IV Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Estimation Specification & Contracts	4	--	--	3
2	Construction Technology & Management	4	--	--	3
3	Prestressed Concrete	4	--	--	3
4	**Elective III** i. Bridge Engineering ii. Soil Dynamics and Foundations iii. Solid and Hazardous Waste Management iv. Water Resources Systems Planning v. Urban Transportation Planning Engg	4	--	--	3
5	Seminar on Internship Project	--	3	--	2
6	Project	--	--	--	10
	Total Credits				**24**

Total Course Credits = 48+44 + 42 + 46 = 180

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

TRAFFIC ENGINEERING

Course Learning Objectives:

The objective of this course is:

- To know various components and characteristics of traffic.
- To know various traffic control devices and principles of highway safety.
- To understand the detrimental effects of traffic on environment
- To know highway capacity and level of service concepts.
- To learn about intelligent vehicle highway systems.

Course Outcomes:

At the end of course, Student can

- Determine traffic speed, volume, travel time and density.
- Design traffic signals
- Determine highway capacity

SYLLABUS:

UNIT- I Components Of The Traffic System: Human-Vehicle–Environment System; characteristics of Road users, Vehicles, Highways and their classification, Traffic Studies: Inventories, Volume studies; Speed, Travel time and Delay studies, Intersection studies, Pedestrian studies; Parking studies; Accident studies.

UNIT- II Traffic Characteristics: Microscopic and macroscopic flow characteristics: Time headways; Temporal, spatial and model flow patterns; Interrupted and Un interrupted traffic. Microscopic and macroscopic speed characteristics: Vehicular speed Trajectories; Speed characteristics – Mathematical distribution; Speed and travel time variations; Travel time and delay studies. Microscopic and Macroscopic density characteristics: Distance headway characteristics; Car-following theories; Density measurement techniques; Density contour maps

UNIT- III Traffic Control Devices & Highway Safety: Traffic signs & Markings; Signal Warrants; Signal phasing and Development of phase plans; Fixed and Vehicle activated signals; Webster method; ARRB method; Drew's Method; IRC method; Signal coordination; Area Traffic control. Accident characteristics – Road – Driver – Vehicle; Accident recording and Analysis; Highway Safety Improvement Program; Safety Audit.

UNIT-IV Environmental Considerations: Air pollution: Kinds of pollutants; Air pollution standards; Measures of air quality; modelling and control. Noise pollution: Measurement of sound levels; Acceptable limits, Prediction of noise levels, Traffic noise control.

UNIT- V Highway Capacity And Level Of Service: Capacity and level of service; Factors affecting Capacity and LOS; Capacity of Rural Highways, Capacity of Urban Roads; HCM and IRC standards.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

UNIT- VI Intelligent Vehicle – Highway Systems: Traffic surveillance and monitoring; IVHS programs, Role of IVHS, IVHS categories, Benefits and Costs of IVHS

Text Books

1. Traffic Engineering: Theory and Practice, Pignataro LJ., Prentice hall, Inc
2. Traffic and Transport planning, Kadiyali L.R., Khanna Publishers

References:

1. Traffic Engineering Hand Book, Institute of Transportation Engineers, 4 Ed., Prentice Hall
2. Traffic Engineering, Mc Shane, WR and RP Roess, Prentice Hall
3. Highway Traffic analysis and design, Salter RJ and NB Hounsell, 3rd ed., Macmillan
4. Traffic Planning and Engineering, Hobbs FD., Pergamon press
5. Traffic flow fundamentals, May, A.D., Prentice Hall

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

WASTE WATER MANAGEMENT
OPEN ELECTIVE

Course Learning Objectives:

The course will address the following:

1. Enables the student to distinguish between the quality of domestic and industrial water requirements and wastewater quantity generation.
2. To impart knowledge on selection of treatment methods for industrial wasteswater.
3. To know the common methods of treatment in different industries
4. To acquire knowledge on operational problems of common effluent treatment plant.

Course Outcomes:

Upon the successful completion of this course, the students will be able to:

a. Suggest treatment methods for any industrial wastewater.
b. Learn the manufacturing process of various industries.
c. Student will be in a position to decide the need of common effluent treatment plant for the industrial area in their vicinity

SYLLABUS:

UNIT – I

Industrial water Quantity and Quality requirements: Boiler and cooling waters–Process water for Textiles, Food processing, Brewery Industries, power plants, fertilizers, sugar mills.

UNIT – II

Miscellaneous Treatment: Use of Municipal wastewater in Industries – Advanced water treatment - Adsorption, Reverse Osmosis, Ion Exchange, Ultra filtration, Freezing, elutriation, Removal of Iron and Manganese, Removal of Colour and Odour.

UNIT – III

Basic theories of Industrial Wastewater Management: Industrial waste survey - Measurement of industrial wastewater Flow-generation rates – Industrial wastewater sampling and preservation of samples for analysis - Wastewater characterization-Toxicity of industrial effluents-Treatment of wastewater-unit operations and processes-Volume and Strength reduction –Neutralization – Equalization and proportioning- recycling, reuse and resources recovery.

UNIT – IV

Industrial wastewater disposal management: discharges into Streams, Lakes and oceans and associated problems, Land treatment – Common Effluent Treatment Plants: advantages and suitability, Limitations and challenges- Recirculation of Industrial Wastes- Effluent Disposal Method.

UNIT – V

Process and Treatment of specific Industries-1: Manufacturing Process and origin, characteristics, effects and treatment methods of liquid waste from Steel plants, Fertilizers, Textiles, Paper and Pulp industries, Oil Refineries, Coal and Gas based Power Plants.

UNIT – VI

Process and Treatment of specific Industries-2: Manufacturing Process and origin, characteristics, effects and treatment methods of liquid waste from Tanneries, Sugar Mills, Distillers, Dairy and Food Processing industries, Pharmaceutical Plants.

Text book

1. Wastewater Treatment by M.N. Rao and A.K. Dutta, Oxford & IBH, New Delhi.
2. Industrial Wastewater Treatment by KVSG Murali Krishna.
3. Industrial Wastewater treatment by A.D. Patwardhan, PHI Learning, Delhi
4. Wastewater Treatment for Pollution Control and Reuse, by Soli. J Arceivala, Shyam R Asolekar, Mc-Graw Hill, New Delhi; 3rd Edition

References

1. Industrial Water Pollution Control by W. Wesley Eckenfelder, Mc- GrawHill, Third Edition
2. Wastewater Engineering by Metcalf and Eddy Inc., Tata McGrawhill Co., New Delhi
3. Wastewater Treatment- Concepts and Design Approach by G.L. Karia & R.A. Christian, Prentice Hall of India.
4. Unit Operations and Processes in Environmental Engineering by Reynolds. Richard, Cengage Learning.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

URBAN TRANSPORTATION PLANNING

SYLLABUS:

UNIT –I Urban Transportation Problems & Travel Demand: Urban Issues, Travel Characteristics, Evolution of Planning Process, Supply and Demand – Systems approach; Trends, Overall Planning process, Long term Vs Short term planning, Demand Function, Independent Variables, Travel Attributes, Assumptions in Demand Estimation, Sequential, and Simultaneous Approaches, Aggregate and Disaggregate Techniques.

UNIT –II Data Collection And Inventories: Collection of data – Organisation of surveys and Analysis, Study Area, Zoning, Types and Sources of Data, Road Side Interviews, Home Interview Surveys, Commercial Vehicle Surveys, Sampling Techniques, Expansion Factors, Accuracy Checks, Use of Secondary Sources, Economic data – Income – Population – Employment – Vehicle Owner Ship.

UNIT –III Trip Generation & Distribution: UTPS Approach, Trip Generation Analysis: Zonal Models, Category Analysis, Household Models, Trip Attraction models, Commercial Trip Rates; Trip Distribution: Growth Factor Methods, Gravity Models, Opportunity Models, Time Function Iteration Models.

UNIT –IV Mode Choice Analysis: Mode Choice Behaviour, Competing Modes, Mode Split Curves, Aggregate and Disaggregate Approaches; Discrete Choice Analysis, Choice sets, Maximum Utility, Probabilistic Models: Binary Logit, Multinomial Logit Model – IIA property; Aggregation

UNIT –V Traffic Assignment: Diversion Curves; Basic Elements of Transport Networks, Coding, Route Properties, Path Building Criteria, Skimming Tree, All-or-Nothing Assignment, Capacity Restraint Techniques, Reallocation of Assigned Volumes, Equilibrium Assignment.

UNIT –VI Corridor Identification, Plan Preparation & Evaluation: Master plans, Selection of Corridor, Corridor Identification, Corridor deficiency Analysis; Travel Forecasts to Evaluate Alternative Improvements, Impacts of New Development on Transportation Facilities. Pivot Point Analysis, Environmental and Energy Analysis; Case studies

Text Books:

1. Introduction to Urban System Planning, Hutchinson, B.G., McGraw Hill.
2. Transportation Engineering - An Introduction, Khisty C.J., Prentice Hall

References:

1. Introduction to Transportation Planning, Bruton M.J., Hutchinson of London.
2. Fundamentals of Transportation Planning, Papacostas, Tata McGraw Hill
3. Urban Transportation Planning: A decision oriented Approach, Mayer M and Miller E, McGraw Hill
4. Traffic Engineering and Transportation Planning, Kadiyali.L.R., Khanna Publishers, New Delhi.
5. Metropolitan Transportation Planning, Dicky, J.W., Tata McGraw Hill

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

WATER RESOURCES SYSTEMS PLANNING

Course Learning Objectives:

The course is designed to

- introduce the concepts of system analysis in the planning, design, and operation of water resources.
- appreciate mathematical optimization methods and models.
- learn and apply basic economic analysis tools to water resources projects.
- understand linear, nonlinear and dynamic programming techniques and apply them to various water resources systems planning and design problems.
- appreciate simulation and management techniques in water resources systems.

Course Outcomes

At the end of the course the student will be able to

- apply optimization methods to solve problems related to water resource systems.
- perform basic economic analysis to evaluate the economic feasibility of water resources projects
- formulate optimization models for decision making in water resources systems.
- use simulation models for planning and design of Water Resources Systems.

SYLLABUS:

UNIT – I Introduction: Concepts of systems analysis, definition, systems approach to water resources planning and management, role of optimization models, objective function and constraints, types of optimization techniques.

UNIT – II Linear programming: Formulation of linear programming models, graphical method, simplex method, application of linear programming in water resources, revised simplex method, duality in linear programming, sensitivity analysis.

UNIT – III Dynamic programming: Principles of optimality, forward and backward recursive dynamic programming, curse of dimensionality, application for resource allocation.

UNIT – VI Non-linear optimization techniques: Classical optimization techniques, Lagrange methods, Kuhn-Tucker conditions, Search techniques, overview of Genetic Algorithm

UNIT – V Water Resources Economics: Basics of engineering economics, economic analysis, conditions of project optimality, benefit and cost analysis

UNIT – VI Simulation and management: Application of simulation techniques in water resources, planning of reservoir system, optimal operation of single reservoir system,

allocation of water resources, optimal cropping pattern, conjunctive use of surface and sub-surface water resources.

Text Books:

1. Water Resources System Analysis, Vedula S and P. P. Mujumdar, McGraw Hill Company Ltd, 2005.
2. Water Resources Economics, James D and R. Lee, Oxford Publishers, 2005.

References:

1. Water Resources Systems Planning and Management - An Introduction to Methods, Models and Applications, Loucks D P and E V Bee, UNESCO Publications, 2005 (http://ecommons.cornell.edu/bitstream/1813/2804/21/00_intro.pdf)
2. Optimal design of water distribution networks, Bhave, P. R, Narosa Publishing house, 2003.

PRINCIPAL
Pottl Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-52

IV Year - II Semester

L	T	P	C
4	0	0	3

PRESTRESSED CONCRETE

Course Learning Objectives:

The objective of this course is:

- Familiarize Students with concepts of prestressing
- Equip student with different systems and devices used in prestressing
- Understand the different losses of prestress including short and long term losses
- Familiarize students with the analysis and design of prestressed concrete members under flexure, shear and torsion

Course Outcomes:

At the end of this course the student will be able to

- Understand the different methods of prestressing
- Estimate effective prestress including the short and long term losses
- Analyze and design prestressed concrete beams under flexure and shear
- Understand the relevant IS Codal provisions for prestressed concrete

SYLLABUS:

UNIT-I Basic concepts of Prestressing- Advantages and Applications of Prestressed Concretes, High Strength Concrete- Permissible Stresses, Shrinkage, Creep, Deformation Characteristics, High strength Steel- Types, Strength- Permissible Stresses- Relaxation of Stress, Cover Requirements.

UNIT-II Prestressing Systems- Introduction, Tensioning devices, Pre-tensioning Systems, Post tensioning Systems, Basic Assumptions in Analysis of prestress and design, Analysis of prestress, Resultant Stresses at a section- pressure line- Concepts of load balancing- Stresses in Tendons, Cracking moment.

UNIT-III Losses of Pre-stressing- Loss of Pre-stress in pre-tensioned and post tensioned members due to various causes -Elastic shortening of concrete, shrinkage of concrete, creep of concrete, Relaxation stress in steel, slip in anchorage, differential shrinkage- bending of members and frictional losses- Total losses allowed for design

UNIT-IV Design for Flexural resistance- Types of flexural failure – Code procedures- Design of sections for flexure- Control of deflections- Factors influencing Deflection- Prediction of short term and long term deflections.

UNIT-V Design for Shear and Torsion- Shear and Principal Stresses- Design of Shear reinforcements- Codal Provisions- Design for Torsion, Design for Combined bending, shear and torsion.

UNIT-VI Transfer of Prestress in pre tensioned members- Transmission length- Bond stresses- end zone reinforcement- Codal provisions- Anchorage zone Stresses in Post tensioned members- Stress distribution in end block- Anchorage Zone reinforcement.

Text Books

1. Prestressed Concrete, N. Krishna Raju, Tata McGraw hill
2. Prestressed Concrete, S. Ramamrutham

References:

1. Prestressed Concrete, P. Dayaratnam
2. Prestressed Concrete, T. Y. Lin & Burns, Wiley Publications

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OFCIVIL ENGINEERING

		L	T	P	C
		3	0	0	3
f) PROJECT MANAGEMENT					

Course Learning Objectives:
The objective of this course is:

1. To introduce to the student, the concept of project management including network drawing and monitoring
2. to introduce the various equipment related to construction like earth moving equipment, trucks and handling equipment, aggregate production and construction equipment and machinery
3. to introduce the importance of safety in construction projects

Course Outcomes:
Upon the successful completion of this course, the students will be able to:

a) appreciate the importance of construction planning
b) understand the functioning of various earth moving equipment
c) know the methods of production of aggregate products and concreting
d) apply the gained knowledge to project management and construction techniques

SYLLABUS:

UNIT- I
Construction project management and its relevance – qualities of a project manager – project planning – coordination –scheduling - monitoring – bar charts – milestone charts – critical path method

UNIT -II
Project evaluation and review technique – cost analysis - updating – crashing for optimum cost – crashing for optimum resources – allocation of resources introduction to softwares for construction management project management using PRIMAVERA (or) equivalent.

UNIT- III
Construction equipment – economical considerations – earthwork equipment – Trucks and handling equipment – rear dump trucks – capacities of trucks and handling equipment – calculation of truck production – compaction equipment – types of compaction rollers

UNIT -IV
Hoisting and earthwork equipment – hoists – cranes – tractors - bulldozers – graders – scrapers– draglines - clamshell buckets
Concreting equipment — concrete mixers – Batching plants, mobile using plants like "Ajax" etc. mixing and placing of concrete – consolidating and finishing

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OFCIVIL ENGINEERING

UNIT -V

Construction methods – earthwork – piling – placing of concrete – form work – fabrication and erection – quality control and safety engineering
BIM for Civil Engineers (Building Information Modelling)

TEXT BOOKS:

1. 'Construction Planning, Equipment and Methods' by Peurifoy and Schexnayder , Shapira, Tata Mcgrawhill
2. 'Construction Project Management Theory and Practice' by Kumar Neeraj Jha (2011), Pearson.
3. 'Construction Technology' by Subir K. Sarkar and SubhajitSaraswati, Oxford University press

REFERENCES:

1. 'Construction Project Management - An Integrated Approach' by Peter Fewings , Taylor and Francis
2. 'Construction Management Emerging Trends and Technologies' by Trefor Williams , Cengage learning

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OFCIVIL ENGINEERING

	L	T	P	C
	3	0	0	3

i) WASTEWATER TREATMENT

Course Learning Objectives:

The course will address the following:

1. Enables the student to distinguish between the quality of domestic and industrial water requirements and wastewater quantity generation.
2. To impart knowledge on selection of treatment methods for industrial wastewater.
3. To know the common methods of treatment in different industries
4. To acquire knowledge on operational problems of effluent treatment plant.

Course Outcomes:

Upon the successful completion of this course, the students will be able to:

a) Know the quality and quantity of water for various industries and Advanced water treatment methods
b) Learn the common methods of treatment of wastewaters and Biological treatment methods
c) Study of methods to reduce impacts of disposal of wasters into environment and CETPs.
d) Study of methods of treatment of wastewaters from specific industries like steel plants, refineries, and power plants, that imply biological treatment methods
e) Study of methods of treatment of wastewaters from industries like Aqua, dairy, sugar plants, and distilleries that imply biological treatment methods

SYLLABUS:

UNIT – I

Industrial water Quantity and Quality requirements: Boiler, Cooling, Domestic/Canteen and Process waters for Textiles, Food processing, Dairy, Aqua industry, Sugar mills, Brewery and distillery Industries, Fertilizer industry, Power plants. Advanced water treatment - Adsorption, Reverse Osmosis, Ion Exchange, Ultra filtration, Freezing, elutriation, Removal of Iron and Manganese, Removal of Colour and Odour. Use of Municipal wastewater in Industries.

UNIT – II

Basic theories of Industrial Wastewater Management: Industrial waste survey - Measurement of industrial wastewater Flow-generation rates – Industrial wastewater sampling and preservation of samples for analysis - Wastewater characterization- Toxicity of industrial effluents- Common methods of Treatment of wastewaters - Unit operations and processes- Volume and Strength reduction –Neutralization – Equalization and proportioning- recycling, reuse and resources recovery. Miscellaneous Treatment: Biological treatment of sewage- Primary, secondary and Tertiary treatment of sewage.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology
Kothapet, VIJAYAWADA-520 001.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OFCIVIL ENGINEERING

UNIT – III

Industrial wastewater disposal management: Discharges into Sewers, Streams- Oxygen sag curve, Lakes-eutrophication and oceans and associated problems, Land treatment – sewage sickness, Common Effluent Treatment Plants: advantages and suitability, Limitations and challenges- Recirculation of Industrial Wastewaters- Effluent Disposal Method.

UNIT – IV

Process and Treatment of specific Industries-1: Manufacturing Process and origin, characteristics, effects and treatment methods of liquid waste from Steel plants, Fertilizers, Textiles, Paper and Pulp industries, Oil Refineries, Coal and Gas based Power Plants. Case studies.

UNIT – V

Process and Treatment of specific Industries-2: Manufacturing Process and origin, characteristics, effects and treatment methods of liquid waste from Tanneries, Sugar Mills, Distillers, Dairy and Food Processing industries, Aqua industry, Pharmaceutical Plants. Case studies.

Text books

1. Industrial Wastewater Treatment by KVSG Murali Krishna, Paramount Publishers, Visakhapatnam, 2019
2. Wastewater Treatment by M.N. Rao and A.K. Dutta, Oxford & IBH, NewDelhi.
3. Industrial Wastewater treatment by A.D. Patwardhan, PHI Learning,Delhi
4. Wastewater Treatment for Pollution Control and Reuse, by Soli. J Arceivala, Shyam R Asolekar, Mc-Graw Hill, New Delhi; 3rd Edition

References

1. Industrial Water Pollution Control by W. Wesley Eckenfelder, Mc- GrawHill, Third Edition
2. Wastewater Engineering by Metcalf and EddyInc.,Tata McGrawhillCo., New Delhi
3. Wastewater Treatment- Concepts and Design Approach by G.L. Karia& R.A. Christian, Prentice Hall of India.
4. Unit Operations and Processes in Environmental Engineering by Reynolds. Richard, Cengage Learning.

PRINCIPAL
Potti Sriramulu Chalavadi Mallikharjuna Rao
College of Engineering & Technology