1.1.3.
Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the last five years

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R13 Regulations

(Curriculum and Course Structure in the order of)

Dept. of Civil Engineering

R13 REGULATION							
Semester I							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	R13101	English – I	3	1		4	3
2	R13102	Mathematics – I	3	1		4	3
3	R13104	Engineering Chemistry	3	1		4	3
4	R13110	Engineering Mechanics	3	1		4	3
5	R13106	Environmental Studies	3	1		4	3
6	R13105	Computer Programming	3	1		4	3
7	R13115	Engineering Chemistry Laboratory			3	3	2
8	R13111	English – Communication Skills Lab – I			3	3	2
9	R13116	C Programming Lab			3	3	2
Total Credits							**24**
Semester II							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	R13201	English - II	3	1		4	3
2	R13207	Mathematics - II	3	1		4	3
3	R13202	Mathematics - III	3	1		4	3
4	R13210	Engineering Physics	3	1		4	3
5	R13208	Professional Ethics and Human Values	3	1		4	3
6	R13209	Engineering Drawing	1		3	4	3
7	R13213	English-Communication Skills Lab - II			3	3	2
8	R13214	Engineering Physics Laboratory			3	3	2
9	R13113	Engineering Physics – Virtual Labs -Assignments			2		
10	R13216	Engineering Workshop & IT Workshop			3	3	2
Total Credits							**24**
Semester III							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT21011	Electrical & Electronics Engineering	3	1		4	3
2	RT21012	Probability & Statistics	3	1		4	3
3	RT21013	Strength of Materials-I	3	1		4	3

4	RT21014	Building Materials and Construction	3	1		4	3
5	RT21015	Surveying	3	1		4	3
6	RT21016	Fluid Mechanics	3	1		4	3
7	RT21017	Surveying Field work-I			3	3	2
8	RT21018	Strength of Materials Lab			3	3	2
Total Credits							**22**
Semester IV							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT22011	Building Planning & Drawing	3	1		4	3
2	RT21034	Managerial Economics and Financial Analysis	3	1		4	3
3	RT22013	Strength of Materials- II	3	1		4	3
4	RT22012	Hydraulics and Hydraulic Machinery	3	1		4	3
5	RT22015	Concrete Technology	3	1		4	3
6	RT22016	Structural Analysis - I	3	1		4	3
7	RT22017	Fluid Mechanics and Hydraulic Machinery Lab			3	3	2
8	RT22018	Concrete Technology Lab			3	3	2
9	RT22019	Surveying Field work- II			3	3	2
Total Credits							**24**
Semester V							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT31014	Engineering Geology	3	1		4	3
2	RT31012	Structural Analysis – II	3	1		4	3
3	RT31013	Design and Drawing of Reinforced Concrete Structures	3	1		4	3
4	RT31011	Geotechnical Engineering - I	3	1		4	3
5	RT31015	Transportation Engineering – I	3	1		4	3
6	RT31016	IPR and Patents	3	1		4	3
7	RT31018	Engineering Geology Lab			3	3	2
8	RT31017	Geotechnical Engineering Lab			3	3	2
Total Credits							**21**
Semester VI							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT32013	Design and Drawing of Steel Structures	3	1		4	3
2	RT32012	Geotechnical Engineering – II	3	1		4	3

3	RT32014	Water Resources Engineering–I	3	1		4	3
4	RT32011	Environmental Engineering - I	3	1		4	3
5	RT32015	Transportation Engineering – II	3	1		4	3
6	RT32016A RT32016B RT32016D RT32016E RT32016C RT32016F	**OPEN ELECTIVE** a) Environmental Pollution and Control b) Disaster Management c) Industrial Water & Waste Water Management d) Architecture and Town Planning e) Finite Element Method f) Green Technologies	3	1		4	3
7	RT32017	Computer Aided Engineering Drawing			3	3	2
8	RT32018	Transportation Engineering Lab			3	3	2
Total Credits							**22**
Semester VII							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT41013	Construction Technology and Management	3	1		4	3
2	RT41011	Environmental Engineering - II	3	1		4	3
3	RT41012	Prestressed Concrete	3	1		4	3
4	RT41015	Remote Sensing and GIS Applications	3	1		4	3
5	RT41014	Water Resources Engineering–II	3	1		4	3
6	RT41016 RT41017 RT41018 RT41019 RT4101A RT4101B	**ELECTIVE – I** a) Ground Improvement Techniques b) Air Pollution and Control c) Matrix methods of Structural Analysis d) Urban Hydrology e) Advanced Surveying f) Interior Designs and Decorations	3	1		4	3
7	RT4101L	Environmental Engineering Lab			3	3	2
8	RT4101M	GIS & CAD Lab			3	3	2
Total Credits							**22**
Semester VIII							
S. No.	**Subject Code**	**Subject**	**L**	**T**	**P**	**Total hours**	**Credits**
1	RT42011	Estimating, Specifications &	3	1		4	3

		Contracts					
2	RT42012A RT42012B RT42012C RT42012D RT42012E RT42012F	**ELECTIVE – II** a. Engineering with Geo-synthetics b. Environmental Impact Assessment and Management c. Advanced Structural Engineering d. Ground Water Development and Management e. Traffic Engineering f. Infrastructure Management	3	1		4	3
3	RT42013A RT42013B RT42013C RT42013D RT42013E RT42013F	**ELECTIVE – III** a) Advanced foundation Engineering b) Solid waste Management c) Earthquake Resistant Design d) Water Shed Management e) Pavement Analysis and Design f) Green Buildings	3	1		4	3
4	RT42014A RT42014B RT42014C RT42014D RT42014E RT42014F RT42014G	**ELECTIVE – IV** a) Soil Dynamics and Machine Foundations b) Environmental and Industrial Hygiene c) Repair and Rehabilitation of Structures d) Water Resources System Planning and Management e) Urban Transportation Planning f) Safety Engineering g) Bridge Engineering	3	1		4	3
5	RT42015	Project Work					9
Total Credits							**21**
Total							**180**

Dept. of EEE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA - 533 003, Andhra Pradesh, India
COURSE STRUCTURE R13
ELECTRICAL AND ELECTRONICS ENGINEERING

I Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	English - I	3+1	--	3
2	Mathematics - I	3+1	--	3
3	Mathematics - II	3+1	--	3
4	Engineering Physics	3+1	--	3
5	Ethical & Moral Sciences	3+1	--	3
6	Engineering Drawing	3+1	--	3
7	English – Communication Skills Lab - I	--	3	2
8	Engineering Physics Laboratory	--	3	2
9	Engineering Workshop & IT Workshop	--	3	2
Total Credits				**24**

I Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	English – II	3+1	--	3
2	Mathematics - III	3+1	--	3
3	Engineering Chemistry	3+1	--	3
4	Engineering Mechanics	3+1	--	3
5	Electrical Circuit Analysis - I	3+1	--	3
6	Computer Programming	3+1	--	3
7	Engineering Chemistry Lab	--	3	2
8	English – Communication Skills Lab - II	--	3	2
9	C Programming lab	--	3	2
Total Credits				**24**

II Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Electrical Circuit Analysis-II	3+1	-	3
2	Thermal and Hydro Prime movers	3+1	-	3
3	Basic Electronics And Devices	3+1	-	3
4	Complex Variables and Statistical Methods	3+1	-	3
5	Electro Magnetic Fields	3+1	-	3
6	Electrical Machines-I	3+1	-	3
7	Thermal and Hydro Lab	-	3	2
8	Electrical Circuits Lab	-	3	2
Total Credits				**22**

II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Environmental studies	3+1	-	3
2	Switching Circuits and Logic Design	3+1	-	3
3	Pulse & Digital Circuits	3+1	-	3
4	Power Systems-I	3+1	-	3
5	Electrical Machines-II	3+1	-	3
6	Control Systems	3+1	-	3
7	Electrical Machines -I Lab	-	3	2
8	Electronic Devices & Circuits Lab	-	3	2
Total Credits				**22**

III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Managerial Economics and Financial Analysis	3+1	--	3
2	Electrical Measurements	3+1	--	3
3	Power Systems-II	3+1	--	3
4	Electrical Machines-III	3+1	--	3
5	Power Electronics	3+1	--	3
6	Linear & Digital IC Applications	3+1	--	3
7	Electrical Machines-II Lab	--	3	2
8	Control Systems Lab	--	3	2
9	IPR & Patents	3+1		2
Total Credits				**24**

III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Switchgear and Protection	3+1	--	3
2	Microprocessors & Microcontrollers	3+1	--	3
3	Utilization of Electrical Energy	3+1	--	3
4	Power System Analysis	3+1	--	3
5	Power Semiconductor Drives	3+1	--	3
6	Management Science	3+1	--	3
7	Power Electronics Lab	--	3	2
8	Electrical Measurements Lab	--	3	2
Total Credits				**22**

IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Renewable Energy Sources and Systems	3+1	-	3
2	HVAC & DC Transmission	3+1	-	3
3	Power System Operation & Control	3+1	-	3
4	**Open Elective**	3+1	-	3
5	**Elective – I**	3+1	-	3
6	Microprocessors & Microcontrollers Lab	-	3	2
7	Electrical Simulation Lab	-	3	2
8	Power systems lab		3	2
Total Credits				**21**

IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Digital Control Systems	3+1	-	3
2	**Elective – II**	3+1	-	3
3	**Elective – III**	3+1	-	3
4	**Elective – IV**	3+1	-	3
5	Project	-	-	9
Total Credits				**21**

Open Elective:
1. Energy Audit, Conservation and Management
2. Instrumentation
3. Non Conventional Sources of Energy
4. Optimization Techniques

Elective – I:
1. VLSI Design
2. Electrical Distribution Systems
3. Optimization Techniques

Elective – II:
1. Advanced Control Systems
2. Extra High Voltage Transmission
3. Special Electrical Machines

Elective – III:
1. Electric power Quality.
2. Digital Signal Processing
3. FACTS: Flexible Alternating Current Transmission Systems.

Elective-IV:
1. OOPS through Java
2. UNIX and Shell Programming
3. AI techniques
4. Power system reforms.
5. Systems Engineering.

Dept. of Mechanical Engg

Mechanical Engineering course strucutre

R13 Regulation

COURSE STRUCTURE

I Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	English – I	3+1	--	3
2	Mathematics - I	3+1	--	3
3	Engineering Chemistry	3+1	--	3
4	Engineering Mechanics	3+1	--	3
5	Computer Programming	3+1	--	3
6	Environmental Studies	3+1	--	3
7	Engineering Chemistry Laboratory	--	3	2
8	English - Communication Skills Lab - I	--	3	2
9	C Programming Lab	--	3	2
Total Credits				**24**

I Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	English – II	3+1	--	3
2	Mathematics – II (Mathematical Methods)	3+1	--	3
3	Mathematics – III	3+1	--	3
4	Engineering Physics	3+1	--	3
5	Professional Ethics and Human Values	3+1	--	3
6	Engineering Drawing	3+1	--	3
7	English - Communication Skills Lab - II	--	3	2
8	Engineering Physics Lab	--	3	2
9	Engineering Physics – Virtual Labs - Assignments	--	2	--
10	Engg.Workshop & IT Workshop	--	3	2
Total Credits				**24**

II Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Metallurgy & Materials Science	3+1*	--	3
2	Mechanics of Solids	3+1*	--	3
3	Thermodynamics	3+1*	--	3
4	Managerial Economics & Financial Analysis	3+1*	--	3
5	Basic Electrical & Electronics Engineering	3+1*	--	3
6	Computer aided Engineering Drawing Practice	3+1*	--	3
7	Basic Electrical & Electronics Engg. Lab	--	3	2
8	Mechanics of Solids & Metallurgy lab	--	3	2

Total Credits			22

II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Kinematics of Machinery	3+1*	--	3
2	Thermal Engineering -I	3+1*	--	3
3	Production Technology	3+1*	--	3
4	Fluid Mechanics & Hydraulic machinery	3+1*	--	3
5	Machine Drawing	3+1*	--	3
6	Fluid mechanics & Hydraulic machinery Lab	--	3	2
7	Production Technology Lab	--	3	2
8	Thermal Engineering Lab	--	3	2
Total Credits				**21**

III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Dynamics of Machinery	3+1*		3
2	Metal Cutting & Machine Tools	3+1*		3
3	Design of Machine Members–I	3+1*		3
4	Instrumentation & Control Systems	3+1*		3
5	Thermal Engineering -II	3+1*		3
6	Metrology	3+1*		3
7	Metrology & Instrumentation Lab		3	2
8	Machine Tools Lab		3	2
9	IPR & Patents		3	2
Total Credits				**24**

III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Operations Research	3+1*		3
2	Interactive Computer Graphics	3+1*		3
3	Design of Machine Members– II	3+1*		3
4	Robotics	3+1*		3
5	Heat Transfer	3+1*		3
6	Industrial Engineering Management	3+1*		3
7	**Departmental Elective – I**	3+1*		3
8	Heat Transfer Lab		3	2
Total Credits				23

IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Automobile Engineering	3+1*		3
2	CAD/CAM	3+1*		3
3	Finite Element Methods	3+1*		3
4	Unconventional Machining Processes	3+1*		3
5	**Open Elective**	3+1*		3
6	**Departmental Elective – II**	3+1*		3
7	Simulation Lab		3	2
8	Design/Fabrication Project		2	1
Total Credits				**21**

IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Production Planning and Control	3+1*		3
2	Green Engineering Systems	3+1*		3
3	**Departmental Elective – III**	3+1*		3

4	**Departmental Elective – IV**	3+1*		3
5	Project Work			9
Total Credits				**21**

OPEN ELECTIVE:

1. MEMS
2. Nanotechnology

Departmental Elective -I:

1. Refrigeration & Air-conditioning
2. Computational Fluid Dynamics
3. Condition Monitoring
4. Rapid Prototyping

Departmental Elective -II:

1. Material Characterization Techniques
2. Design for Manufacture
3. Automation in Manufacturing
4. Industrial Hydraulics & Pneumatics

Departmental Elective -III:

1. Experimental Stress Analysis
2. Mechatronics
3. Advanced Materials
4. Power Plant Engineering

Departmental Elective -IV:

1. Non Destructive Evaluation
2. Advanced Optimization Techniques
3. Gas Dynamics & Jet Propulsion
4. Quality and Reliability Engineering

Dept. of ECE

I Year- I Semester

S.No	Subject	T	P	Credits
1.	English-I	3	-	3
2.	Mathematics-I	3+1	-	3
3.	Mathematics-II(Mathematical Methods)	3+1	-	3
4.	Engineering Physics	3+1	-	3
5.	Professional Ethics and Human Values	3+1	-	3
6.	Engineering Drawing	1+3	-	3
7.	English – Communication Skills Lab-1	-	3	2
8.	Engineering Physics Laboratory	-	3	2
9.	Engineering Physics – Virtual Labs - Assignments	-	2	-
10.	Engineering Workshop & IT Workshop	-	3	2
	Total Credits			**24**

I Year- II Semester

S.No	Subject	T	P	Credits
1.	English-II	3	-	3
2.	Mathematics-III	3+1	-	3
3.	Engineering Chemistry	3+1	-	3
4.	Engineering Mechanics	3+1	-	3
5.	Computer Programming	3+1	-	3
6.	Network Analysis	3+1	-	3
7.	Engineering Chemistry Laboratory	-	3	2
8.	English – Communication Skills Lab -2	-	3	2
9.	Computer Programming Lab	-	3	2
	Total Credits			**24**

II Year- I Semester

S.No	Subject	T	P	Credits
1.	Managerial Economics and Financial Analysis	3+1	-	3
2.	Electronic Devices and Circuits	3+1	-	3
3.	Data Structures	3+1	-	3
4.	Environmental Studies	3	-	3
5.	Signals & Systems	3+1	-	3
6.	Electrical Technology	3+1	-	3
7.	Electronic Devices and Circuits Lab	-	3	2
8.	Networks & Electrical Technology Lab	-	3	2
	Total Credits			**22**

II Year- II Semester

S.No	Subject	T	P	Credits
1.	Electronic Circuit Analysis	3+1	-	3
2.	Management Science	3+1	-	3
3.	Random Variables & Stochastic Processes	3+1	-	3
4.	Switching Theory & Logic Design	3+1	-	3
5.	EM Waves and Transmission Lines	3+1	-	3
6.	Analog Communications	3+1	-	3
7.	Electronic Circuit Analysis Lab	-	3	2
8.	Analog Communications Lab	-	3	2
	Total Credits			**22**

III Year- I Semester

S.No	Subject	T	P	Credits
1.	Pulse & Digital Circuits	3+1	-	3
2.	Linear IC Applications	3+1	-	3
3.	Control Systems	3+1	-	3
4.	Digital System Design & Digital IC Applications	3+1	-	3
5.	Antennas and Wave Propagation	3+1	-	3
6.	Pulse & Digital Circuits Lab	-	3	2
7.	LIC Applications Lab	-	3	2
8.	Digital System Design & DICA Lab	-	3	2
9.	IPR & Patents	3	-	2
	Total Credits			**23**

III Year- II Semester

S.No	Subject	T	P	Credits
1.	Microprocessors And Microcontrollers	3+1	-	3
2.	Digital Signal Processing	3+1	-	3
3.	Digital Communications	3+1	-	3
4.	Microwave Engineering	3+1	-	3
5.	Open Elective	3+1	-	3
6.	Microprocessors And Microcontrollers Lab	-	3	2
7.	Digital Communications Lab	-	3	2
8.	Digital Signal Processing Lab	-	3	2
9.	Seminar	-	2	1
	Total Credits			**22**

IV Year- I Semester

S.No	Subject	T	P	Credits
1.	VLSI Design	3+1	-	3
2.	Computer Networks	3+1	-	3
3.	Digital Image Processing	3+1	-	3
4.	Computer Architecture & Organization	3+1	-	3
5.	Elective-I 1. Electronic Switching Systems 2. Analog IC Design 3. Object Oriented Programming & OS 4. Radar Systems 5. Advanced Computer Architecture	3+1	-	3
6.	Elective-II 1. Optical Communication 2. Digital IC Design 3. Speech Processing 4. Artificial Neural Network & Fuzzy Logic 5. Netwrok Security & Cryptography	3+1	-	3
7.	VLSI Lab	-	3	2
8.	Microwave Engineering Lab	-	3	2
	Total Credits			**22**

IV Year- II Semester

S.No	Subject	T	P	Credits
1.	Cellular Mobile Communication	3+1	-	3
2.	Electronic Measurements and Instrumentation	3+1	-	3
3.	Elective III 1. Satellite Communication 2. Mixed Signal Design 3. Embedded Systems 4. RF Circuit Design 5. Cloud Computing	3+1	-	3
4.	Elective IV 1. Wireless Sensors and Netrworks 2. System-on-Chip 3. Low Power IC Design 4. Bio-Medical Instrumentation 5. EMI/EMC	3+1	-	3
5.	Project & Seminar	-	-	9
	Total Credits			**21**

Dept. of CSE

I Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	English – I	3+1		3
2	Mathematics - I	3+1		3
3	Engineering Chemistry	3+1		3
4	Engineering Mechanics	3+1		3
5	Computer Programming	3+1		3
6	Environmental Studies	3+1		3
7	Engineering Chemistry Laboratory		3	2
8	English - Communication Skills Lab - I		3	2
9	C Programming Lab		3	2
Total Credits				**24**

I Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	English – II	3+1		3
2	Mathematics – II	3+1		3
3	Mathematical Methods	3+1		3
4	Engineering Physics	3+1		3
5	Ethical & Moral Sciences	3+1		3
6	Engineering Drawing	3+1		3
7	English - Communication Skills Lab - II		3	2
8	Engineering Physics Lab		3	2
9	Engg.Workshop & IT Workshop		3	2
Total Credits				**24**

II Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Managerial Economics and Financial Analysis	4	-	3
2	Object Oriented Programming through C++	4	-	3
3	Mathematical Foundations of Computer Science	4	-	3
4	Digital Logic Design	4	-	3
5	Data Structures	4	-	3
6	Object Oriented Programming Lab	-	3	2
7	Data Structures Lab	-	3	2
8	Digital Logic Design Lab	-	3	2
9	Professional Ethics and Morals-I	2	-	-
Total Credits				**21**

II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Probability and statistics	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	Advanced Data Structures Lab	-	3	2
7	Java Programming Lab	-	3	2
8	Free Open Source Software(FOSS) Lab	-	3	2
9	Professional Ethics and Morals-II	2	-	-
Total Credits				**21**

III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Compiler Design	4	-	3
2	Data Communication	4	-	3
3	Principles of Programming Languages	4	-	3
4	Database Management Systems	4	-	3
5	Operating Systems	4	-	3
6	Compiler Design Lab	-	3	2
7	Operating System Lab	-	3	2
8	Database Management Systems Lab		3	2
9	Linux Programming Lab	-	3	2
10	IPR and Patents- 1	2	-	-
Total Credits				**23**

III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Computer Networks	4	-	3
2	Data Ware housing and Mining	4	-	3
3	Design and Analysis of Algorithms	4	-	3
4	Software Engineering	4	-	3
5	Web Technologies	4	-	3
6	Computer Networks Lab	-	3	2
7	Software Engineering Lab	-	3	2
8	Web Technologies Lab	-	3	2
10	Network Programming Lab	-	3	2
Total Credits				**23**

IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Cryptography and Network Security	4	-	3
2	UML & Design Patterns	4	-	3
3	Mobile Computing	4	-	3
4	**Elective –I**	3+1	-	3
5	**Elective – II**	3+1	-	3
6	UML & Design Patterns Lab	-	3	2
7	Mobile Application Development Lab	-	3	2
8	Software Testing Lab	-	3	2
9	Hadoop & BigData Lab	-	3	2
Total Credits				**23**

IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	**Elective – III**	4	-	3
2	**Elective – IV**	4	-	3
3	Distributed Systems	4	-	3
4	Management Science	4	-	3
5	Project	-	-	9
Total Credits				**21**

Elective – I:
i) Software Testing Methodologies
ii) Simulation Modeling
iii) Information Retrieval Systems
iv) Artificial Intelligence
v) Multimedia Computing
vi) Computer Architecture

Elective – II:
i. Digital Forensics
ii. Cloud and Big Data
iii. Software Project Management
iv. Machine Learning
v. Advanced Databases

Elective – III:
i) Human Computer Interaction
ii) Advanced Operating Systems
iii)Mobile Adhoc & Sensor Networks
iv)Pattern Recognition
v) Digital Image Processing

Elective-IV:
i) Embedded and Real Time Systems
ii) Neural Networks & Soft Computing
iii)Social Networks and the Semantic Web
iv) Parallel Computing
v) E- Commerce

Dept. of Chemical Engg

DEPARTMENT OF CHEMICAL ENGINEERING
MVGR COLLEGE OF ENGINEERING
R13 COURSE STRUCTURE

I YEAR

	I Semester	T	P	C		II Semester	T	P	C
1	English – I	3+1	--	3	1	English - II	3+1	--	3
2	Mathematics - I	3+1	--	3	2	Mathematics - II	3+1	--	3
3	Engineering Chemistry	3+1	--	3	3	Mathematics - III	3+1	--	3
4	Engineering Mechanics	3+1	--	3	4	Engineering Physics	3+1	--	3
5	Environmental Studies	3+1	--	3	5	Ethical & Moral Sciences	3+1	--	3
6	Computer Programming	3+1	--	3	6	Engineering Drawing	3+1	--	3
7	Engineering Chemistry Laboratory	--	3	2	7	English – Communication Skills Lab - II	--	3	2
8	English – Communication Skills Lab - I	--	3	2	8	Engineering Physics Laboratory	--	3	2
9	C Programming lab	--	3	2	9	Engineering Workshop & IT Workshop	--	3	2
				24					**24**

II Year

	I Semester	T	P	C		II Semester	T	P	C
1	Complex Variables	3+1		3	1	Probability & Statistics	3+1		3
2	Elements of Mechanical Engineering	3+1		3	2	Momentum Transfer	3+1		3
3	Electrical & Electronics Engineering	3+1		3	3	Mechanical Unit Operations	3		3
4	Organic Chemistry	3+1		3	4	Chemical Engineering Thermodynamics-I	3+1		3
5	Chemical Process Calculations	3+1		3	5	Inorganic Chemical Technology	3		3
6	Physical Chemistry	3		3	6	Materials Science & Engineering	3		3
7	Basic Engineering (Mech +Elec) Lab		3	2	7	Momentum Transfer Lab		3	2
8	Physical & Organic Chemistry Lab		3	2	8	Mechanical Unit Operations Lab		3	2
				22					**22**

III Year

I Semester		T	P	C	II Semester		T	P	C
1	Process Heat Transfer	3+1		3	1	Management Science	3+1		3
2	Organic Chemical Technology	3+1		3	2	Mass Transfer Operations – II	3+1		3
3	Chemical Engineering Thermodynamics-II	3+1		3	3	Process Dynamics & Control	3+1		3
4	Chemical Reaction Engineering – I	3+1		3	4	Process Engineering Economics	3+1		3
5	Mass Transfer Operations-I	3+1		3	5	Chemical Reaction Engineering-II	3+1		3
6	Process Instrumentation	3+1		3	6	IPR & Patents	2		2
7	Process Heat Transfer Lab		3	2	7	Process Dynamics & Control Lab		3	2
8	Mass Transfer Operations Lab-I		3	2	8	Chemical Reaction Engineering Lab		3	2
					9	Mass Transfer Operations Lab-II		3	2
				22					**23**

IV Year

I Semester		T	P	C	II Semester		T	P	C
1	Transport Phenomena	3+1		3	1	Industrial Safety & Hazard Management	3+1		3
2	Chemical Engineering Plant Design	3+1		3	2	Elective-II ➢ Multicomponent Distillation ➢ Fluidization Engineering ➢ Corrosion & Its Control	3+1		3
3	Process Modelling & Simulation	3+1		3					
4	Biochemical Engineering	3+1		3					
5	Open Elective (For the Students of other Branches) ➢ Industrial Pollution Control Engineering ➢ Design and Analysis of Experiments ➢ Green Fuel Technologies	3+1		3	3	Elective-III ➢ Computational Fluid Dynamics ➢ Optimization of Chemical Processes ➢ Computational Methods in Chemical Engineering	3+1		3
6	Elective –I ➢ Advanced Separation Technology ➢ Nanotechnology ➢ Polymer Technology	3+1		3	4	Elective-IV ➢ Catalysis ➢ Pipeline Engineering ➢ Process Trouble Shooting	3+1		3
7	Process Equipment Design & Drawing (Using Autocad) Lab		3	2	5	Project Work			9
8	Simulation Lab		3	2					
				22					**21**

Total Credits: 48 + 44 + 45 + 43 = 180

Dept. of IT

COURSE STRUCTURE

I Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	English – I	3+1	--	3
2	Mathematics - I	3+1	--	3
3	Engineering Chemistry	3+1	--	3
4	Engineering Mechanics	3+1	--	3
5	Computer Programming	3+1	-	3
6	Environmental Studies	3+1	--	3
7	Engineering Chemistry Laboratory	--	3	2
8	English - Communication Skills Lab - I	--	3	2
9	C Programming Lab	--	3	2
Total Credits				**24**

I Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	English – II	3+1	--	3
2	Mathematics – II (Mathematical Methods)	3+1	--	3
3	Mathematics – III	3+1	--	3
4	Engineering Physics	3+1	--	3
5	Professional Ethics and Human Values	3+1	--	3
6	Engineering Drawing	3+1	--	3
7	English - Communication Skills Lab - II	--	3	2
8	Engineering Physics Lab	--	3	2
9	Engineering Physics – Virtual Labs - Assignments	--	2	--
10	Engg.Workshop & IT Workshop	--	3	2
Total Credits				**24**

II Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Managerial Economics and Financial Analysis	4	--	3
2	Object Oriented Programming through C++	4	--	3
3	Mathematical Foundations of Computer Science	4	--	3
4	Digital Logic Design	4	--	3
5	Data Structures	4	--	3
6	Object Oriented Programming Lab	--	3	2
7	Data Structures Lab	--	3	2
8	Digital Logic Design Lab	--	3	2
9	Seminar	--	--	1
Total Credits				**22**

II Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Probability and statistics	4	--	3
2	Java Programming	4	--	3
3	Advanced Data Structures	4	--	3
4	Computer Organization	4	--	3
5	Language Processors (50% FLAT + 50% CD)	4	--	3
6	Advanced Data Structures Lab	--	3	2
7	Java Programming Lab	--	3	2
8	Free Open Source Software(FOSS) Lab	--	3	2

Total Credits			21

III Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Software Engineering	4	-	3
2	Data Communication	4	-	3t
3	Advanced JAVA	4	-	3
4	Database Management Systems	4	-	3
5	Operating Systems	4	-	3
6	Advanced JAVA Lab	-	3	2
7	Operating System Lab	-	3	2
8	Database Management Systems Lab		3	2
9	Linux Programming Lab	-	3	2
10	IPR and Patents- 1	2	-	-
11	Seminar	--	--	1
Total Credits				**24**

III Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	Computer Networks	4	-	3
2	Data Ware housing and Mining	4	-	3
3	Design and Analysis of Algorithms	4	-	3
4	Software Testing	4	-	3
5	Web Technologies	4	-	3
6	Computer Networks Lab	-	3	2
7	Software Testing Lab	-	3	2
8	Web Technologies Lab	-	3	2
10	IPR and Patents-II	2	--	--
Total Credits				**21**

IV Year – I SEMESTER

S. No.	Subject	T	P	Credits
1	Cryptography and Network Security	4	-	3
2	UML & Design Patterns	4	-	3
3	Mobile Computing	4	-	3
4	**Elective –I**	4	-	3
5	**Elective – II**	4	-	3
6	UML & Design Patterns Lab	-	3	2
7	Mobile Application Development Lab	-	3	2
8	Software Testing Lab	-	3	2
9	Hadoop & BigData Lab	-	3	2
Total Credits				**23**

IV Year – II SEMESTER

S. No.	Subject	T	P	Credits
1	**Elective – III**	4	-	3
2	Distributed Systems	4	-	3
3	Mathematical Opimization (LP, Scheduling, Simulation, QT, Markov analysis, NLP, PERT CPM Network related problems etc)	4	-	3
4	Management Science	4	-	3
5	Project	-	-	9
Total Credits				**21**

Elective – I:

i) Embedded and Real Time Systems
ii) Information Retrieval Systems
iii) Multimedia Computing

Elective – II:

i. Hadoop and Big Data
ii. Software Project Management
iii. Computer Vision
iv. Advanced Databases

Elective – III:

i) Human Computer Interaction
ii) Advanced Operating Systems
iii)iii)Mobile Adhoc & Sensor Networks
iv) Pattern Recognition