VIKAS COLLEGE OF ENGINEERING AND TECHNOLOGY

EXPERIENTIAL LEARNING

B.TECH-MECHANICAL- PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – I	4			3	HS
2	Mathematics - I	4			3	BS
3	Engineering Chemistry	4			3	ES
4	Engineering Mechanics	4			3	ESC
5	Computer Programming	4			3	BS
6	Environmental Studie	4			3	MC
7	Engineering/Applied Chemistry Laboratory			3	2	HS
8	English - Communication Skills Lab - I			3	2	BS
9	Computer Programming Lab			3	2	ES
	Total	24	0	9	24	

I Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – II	4			3	HS
2	Mathematics – II	4			3	BS
3	Mathematics – III	4			3	ES
4	Engineering Physics	4			3	ES
5	Basic Electrical and Electronics Engineering	4			3	HS
6	Engineering Drawing	4			3	ES
7	English - Communication Skills Lab - II			3	2	BS
8	Engineering /Applied Physics Lab			3	2	HS
9	Engineering /Applied Physics – Virtual Labs - Assignments			2		ES
10	Engg.Workshop& IT Workshop			3	2	ES
	Total	24	0	11	24	

II Year - I Semester						
S. No	Subjects	L	T	P	Credits	Category
1	Metallurgy & Materials Science	4			3	PCC
2	Mechanics of Solids	4			3	PCC
3	Thermodynamics	4			3	PCC
4	Managerial Economics & Financial Analysis	4			3	HSMC
5	Fluid Mechanics & Hydraulic Machines	4			3	PCC
6	Computer Aided Engineering Drawing Practice	3	3		3	ESC
7	Electrical & Electronics Engg. Lab			3	2	ESC
8	Mechanics of Solids & Metallurgy Lab			3	2	PCC
	Total	23	3	6	22	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Kinematics of Machinery	4			3	PCC
2	Thermal Engineering -I	4			3	PCC
3	Production Technology	4			3	ESC
4	Design of Machine Members -I	4			3	PCC
5	Machine Drawing	3	3		3	PCC
6	Industrial Engineering and Management	4			3	HSMC
7	Fluid Mechanics & Hydraulic Machines Lab			3	2	PCC
8	Production Technology Lab			3	2	PCC
	Total	23	3	6	22	

III Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Dynamics of Machinery	4			3	PCC
2	Metal Cutting & Machine Tools	4			3	PCC
3	Design of Machine Members–II	4			3	PCC
4	Operations Research	4			3	HSMC
5	Thermal Engineering -II	4			3	PCC
6	Theory of Machines Lab			3	2	PCC
7	Machine Tools Lab			3	2	PCC
8	Thermal Engineering Lab			3	2	PCC
9	IPR & Patents		2			HSMC
	Total	20	2	9	21	

III Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Metrology	4			3	PCC
2	Instrumentation & Control Systems	4			3	PCC
3	Refrigeration & Air-conditioning	4			3	PEC
4	Heat Transfer	4			3	PCC
5	OPEN ELECTIVE 1. Entrepreneurship 2. Data Base Management System 3. Waste Water Management 4. Computer Graphics 5. Industrial Robotics 6. Green Engineering Systems	4			3	OEC
6	Heat Transfer Lab			3	2	PCC
7	Metrology & Instrumentation Lab			3	2	PCC
8	Computational Fluid Dynamics Lab			3	2	PCC
9	MC Professional Ethics & Human Values		3			HSMC
	Total	20	3	9	21	

IV Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Mechatronics	4			3	PEC
2	CAD/CAM	4			3	PCC
3	Finite Element Methods	4			3	PEC
4	Power Plant Engineering	4			3	PCC
5	Elective I 1. Computational Fluid Dynamics 2. Condition Monitoring 3. Additive Manufacturing	4			3	PEC
6	Elective II 1. Advanced Materials 2. Design for Manufacture 3. Gas Dynamics & Jet Propulsion	4			3	PEC
7	CAD/CAM Lab			2	2	PCC
8	Mechatronics Lab			2	2	PEC
	Total	24	0	4	22	

IV Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Production Planning and Control	4			3	PCC
2	Unconventional Machining Processes	4			3	PCC
3	Automobile Engineering	4			3	PCC
4	Elective III 1. Thermal Equipment Design 2. Non Destructive Evaluation 3. Quality and Reliability Engineering	4			3	PEC
5	Seminar		3		2	PROJ
6	Project				10	PROJ
	Total	16	3	0	21	

M.TECH-MACHINE DESIGN- PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Advanced Mechanics of Solids	3	0	0	3	PCC
2	Mechanical Vibrations and Acoustics	3	0	0	3	PCC
3	Design of Modern Vehicle Systems Product Design Geometric Modeling Fracture Mechanics Advanced Mechanisms	3	0	0	3	PEC
4	Non-Destructive Evaluation Robotics Design for Manufacturing & Assembly Multi Body Dynamics Vision Systems and Image Processing	3	0	0	3	PEC
5	Machine Dynamics Lab	0	0	4	2	PCC
6	Design Practice Lab-I	0	0	4	2	PCC
7	Research Methodology and IPR	2	0	0	2	HSMC
8	Soft Skills	2	0	0	0	HSMC
	Total	16	0	8	18	

I Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Advanced Finite Element Methods	3	0	0	3	PCC
2	Advanced Machine Design	3	0	0	3	PCC
3	Theory of Plasticity Signal Analysis and Condition Monitoring Computational Fluid Dynamics Composite Materials Soft Computing	3	0	0	3	PEC
4	Experimental Techniques and data analysis Design with advanced Materials Mechatronics Tribology Experimental Modal Analysis	3	0	0	3	PEC
5	Computational Mathematics Lab	0	0	4	2	PCC
6	Design Practice Lab-II	0	0	4	2	PCC
7	Value Education	2	0	0	0	HSMC
8	Mini Project with Seminar	0	0	4	2	SEM
	Total	14	0	12	18	

II Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Industrial Robotics Advanced Optimization Techniques Additive Manufacturing Mechanics of Composite Materials Vehicle Dynamics	3	0	0	3	PEC
2	OPEN ELECTIVE	3	0	0	3	OEC
3	Dissertation Phase -I	0	0	20	10	PROJ
	Total	6	0	20	16	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Dissertation Phase -II	0	0	32	16	PROJ
	Total	0	0	32	16	

B.TECH – CIVIL- PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – I	4			3	HS
2	Mathematics - I	4			3	BS
3	Engineering Chemistry	4			3	ES
4	Engineering Mechanics	4			3	BS
5	Computer Programming	4			3	BS
6	Environmental Studies	4			3	ES
7	Engineering/Applied Chemistry Laboratory			3	2	HS
8	English - Communication Skills Lab - I			3	2	BS
9	Computer Programming Lab			3	2	ES
	Total	24	0	9	24	

I Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – II	4			3	HS
2	Mathematics – II (Mathematical Methods)	4			3	BS
3	Mathematics – III	4			3	ES
4	Engineering Physics	4			3	ES
5	Elements of Mechanical Engineering	4			3	HS
6	Engineering Drawing	4			3	ES
7	English - Communication Skills Lab - II			3	2	BS

8	Engineering /Applied Physics Lab			3	2	HS
9	Engineering / Applied Physics – Virtual Labs-Assignments			2		ES
10	Engg. Workshop & IT Workshop			3	2	ES
	TOTAL	24	0	11	24	

II Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Probability & Statistics	4			3	BSC
2	Basic Electrical & Electronics Engineering	4			3	ESC
3	Strength of Materials-I	4			3	PCC
4	Building Materials & Construction	4			3	PCC
5	Fluid Mechanics	4			3	PCC
6	Surveying	4			3	PCC
7	Survey Field Work - I			3	2	PCC
8	Strength of Materials Lab			3	2	PCC
9	Professional Ethics & Human Values		3			MC
	--	24	3	6	22	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Building Planning & Drawing	4	--	--	3	ESC
2	Strength of Materials - II	4	--	--	3	PCC
3	Hydraulics & Hydraulic Machinery	4	--	--	3	PCC
4	Concrete Technology	4	--	--	3	PCC
5	Structural Analysis - I	4	--	--	3	PCC
6	Transportation Engineering - I	4	--	--	3	PCC
7	FM & HM Lab	--	--	3	2	PCC
8	Survey Field Work - II	--	--	3	2	PCC
MC	Managerial Economics & Financial Analysis	2	--	--	--	MC
	Total Credits	26	0	6	**22**	

III Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Management Science	4	--	--	3	MC
2	Engineering Geology	4	--	--	3	PCC
3	Structural Analysis –II	4	--	--	3	PCC
4	Design & Drawing of Reinforced Concrete Structures	4	2	--	3	PCC
5	Transportation Engineering – II	4	--	--	3	PCC
6	Concrete Technology Lab	--	--	3	2	PCC
7	Geology Lab	--	--	3	2	PCC
8	Transportation Engineering Lab	--	--	3	2	PCC
	Total Credits	20	2	9	**21**	

III Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	Category
1	Design & Drawing of Steel Structures	4	2	--	3	PCC
2	Geotechnical Engineering – I	4	--	--	3	PCC
3	Environmental Engineering –I	4	--	--	3	PCC
4	Water Resource Engineering –I	4	--	--	3	PCC
5	**OPEN ELECTIVE**	4	--	--	3	OE
6	Geotechnical Engineering Lab	--	--	3	2	PCC
7	Environmental Engineering Lab	--	--	3	2	PCC
8	Computer Aided Engineering Lab	--	--	3	2	PCC
	Total Credits	20	2	9	**21**	

IV Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	Category
1	Environmental Engineering - II	4	--	--	3	PCC
2	Water Resource Engineering - II	4	--	--	3	PCC
3	Geotechnical Engineering - II	4	--	--	3	PCC
4	Remote Sensing & GIS Applications	4	--	--	3	PCC
5	Elective I	4	--	--	3	EL
6	Elective II	4	--	--	3	EL
7	IPR & Patents	--	2	--	--	MC
8	GIS & CAD Lab	--		2	2	PCC
9	Irrigation Design & Drawing	--	--	2	2	ESC
	Total Credits	24	2	4	**22**	

IV Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	Category
1	Estimation Specification & Contracts	4	--	--	3	PCC
2	Construction Technology & Management	4	--	--	3	PCC
3	Prestressed Concrete	4	--	--	3	PCC
4	Elective III	4	--	--	3	EL
5	Seminar on Internship Project	--	3	--	2	PROJECT
6	Project	--	--	--	10	PROJECT
	Total Credits	16	3	0	**24**	

M.TECH-STRUCTURAL ENGINEERING-PROGRAM STRUCTURE

I-I - Semester						
S.No	Course Name	Category	L	T	P	C
1	Theory of Elasticity	PCC	3	0	--	3
2	Structural Dynamics	PCC	3	0	--	3
3	Elective I	EL	3	0	--	3
	a)Matrix Analysis of Structures					
	b) Analytical & Numerical Methods for Structural Engineering					
	c) Design of RCC Foundations					
4	Program Elective II	EL	3	0	--	3
	a)Bridge Engineering					
	b)Repair and Rehabilitation of Structures					
	c) Advanced Reinforced Concrete Design					
5	Advanced Concrete Technology	PCC	2	0	0	2
6	Advanced Concrete Technology Laboratory	PCC	-	--	4	2
7	Advanced Structural Engineering Laboratory	PCC	-	--	4	2
8	Audit Course –1 English for Research PaperWriting DisasterManagement Sanskrit for TechnicalKnowledge ValueEducation	Audit	2	0	0	0
Total						**18**

I-II – Semester						
S.No.	Course Name	Category	L	T	P	C
1	Finite Element Methods in Structural Engineering	PCC	3	0	--	3
2	Theory of Plates and Shells	PCC	3	0	--	3
3	Elective III	EL	3	0	--	3
	a)Stability of Structures					
	b)Advanced Steel Design					
	c) Analysis of Offshore Structures					
4	Elective IV	EL	3	0	--	3
	a) Earthquake Resistant Design of Buildings					
	b)Precast and Prefabricated Structures					
	c)Earth Retaining Structures					
5	Computer Aided Design Laboratory	PCC	--	--	4	2
6	Structural Design laboratory	PCC	--	--	4	2
7	Audit Course-2 Constitution of India Stress Management by Yoga Personality Development through Life Enlightenment Skills.	SEM	0	0	4	2
8	Mini Project With Seminar	Audit	2	0	0	0
Total						**18**

II – I Semester						
S.No.	Course Name	Category	L	T	P	C
1	Elective 5: Program Elective / MOOCS** a)Design of prestressed Concrete Structures b)Structural Health Monitoring c)Industrial Structures	EL	3	0	--	3
2	Open Elective / MOOCS** a) Artificial Intelligence Technique b) Construction Management c) Green Technology	EL	3	0	--	3
3	Dissertation Phase-I / Industrial Project (To be continued and Evaluated next Semester)*	PROJECT	--	--	20	10
Total Credits						**16**

II - II Semester						
S. No.	Course Name	Category	L	T	P	C
1	Project / Dissertation Phase II (Continued from III Semester)	PROJECT	0	0	32	16
Total Credits						**16**

B.TECH-CSE-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	English – I	4			3	HS
2	Mathematics - I	4			3	BS
3	Mathematics – II (Mathematical Methods)	4			3	BS
4	Applied Physics	4			3	BS
5	Computer Programming	4			3	PC
6	Engineering Drawing	4			3	ES
7	English - Communication Skills Lab - 1			3	2	HS
8	Applied / Engineering Physics Lab			3	2	BS
9	Applied / Engineering Physics – Virtual Labs			2		ES
10	Computer Programming Lab			3	2	PC
	Total	**24**	**0**	**11**	**24**	

I Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	English – II	4			3	HS
2	Mathematics - III	4			3	BS
3	Applied Chemistry	4			3	BS
4	Object Oriented Programming through C++	4			3	PC
5	Environmental Studies	4			3	HS
6	Engineering Mechanics	4			3	ES
7	Applied / Engineering Chemistry Laboratory			3	2	BS
8	English - Communication Skills Lab – 2			3	2	HS
9	Object Oriented Programming Lab			3	2	PC
	Total	**24**	**0**	**9**	**24**	

II Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Statistics with Programming	4			3	HS
2	Mathematical Foundations of Computer Science	4			3	PC
3	Digital Logic Design	4			3	ES
4	Python Programming	4			3	PC
5	Data Structures through C++	4			3	PC
6	Computer Graphics	4			3	PC
7	Data Structures through C++Lab			3	2	PC
8	Python Programming Lab			3	2	PC
	Total	**24**	**0**	**6**	**22**	

II Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Software Engineering	4			3	PC
2	Java Programming	4			3	PC
3	Advanced Data Structures	4			3	PC
4	Computer Organization	4			3	PC
5	Formal Languages and Automata Theory	4			3	PC
6	Principles of Programming Languages	4			3	PC
7	Advanced Data Structures Lab			3	2	PC
8	Java Programming Lab			3	2	PC
	Total	**24**	**0**	**6**	**22**	

III Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Compiler Design	4			3	PC
2	Unix Programming	4			3	PC
3	Object Oriented Analysis and Design using UML	4			3	PC
4	Database Management Systems	4			3	PC
5	Operating Systems	4			3	PC
6	Unified Modeling Lab			3	2	PC
7	Operating System & Linux Programming Lab			3	2	PC
8	Database Management System Lab			3	2	PC
9	Professional Ethics & Human Values		3			MC
	Total	**20**	**3**	**9**	**21**	

III Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Computer Networks	4	2		3	PC
2	Data Warehousing and Mining	4			3	PC
3	Design and Analysis of Algorithms	4			3	PC
4	Software Testing Methodologies	4			3	PC
5	**Open Elective:** i. Artificial Intelligence ii. Internet of Things iii Cyber Security iv.Digital Signal Processing v.Embbeded Systems vi. Robotics	4			3	OE
6	Network Programming Lab			3	2	PC
7	Software Testing Lab			3	2	PC
8	Data Warehousing and Mining Lab			3	2	PC
9	IPR & Patents		2			MC
	Total	**20**	**4**	**9**	**21**	

IV Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Cryptography and Network Security	4			3	PC
2	Software Architecture & Design Patterns	4			3	PC
3	Web Technologies	4			3	PC
4	Managerial Economics and Financial Analysis	4			3	HS
5	**Elective-I** i. Big Data Analytics ii. Information Retrieval Systems iii. Mobile Computing	4			3	PE
6	**Elective-II** i. Cloud Computing ii. Software Project Management iii. Scripting Languages	4			3	PE
7	Software Architecture& Design Patterns Lab			3	2	PC
8	Web Technologies Lab			3	2	PC
	Total	**24**	**0**	**6**	**22**	

IV Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Distributed Systems	4			3	PC
2	Management Science	4			3	HS
3	Machine Learning	4			3	PC
4	**Elective-III** i.Concurrent and Parallel Programming ii.Artificial Neural Networks iii. Operations Research	4			3	PE
5	Seminar				2	SEM
6	Project				10	PROJ
	Total	**16**	**0**	**0**	**24**	

M.TECH-CSE-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Mathematical Foundations of Computer Science	3	0	0	3	PC
2	Advanced Data Structures & Algorithms	3	0	0	3	PC
3	Program Elective-1 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems	3	0	0	3	PE
4	Program Elective-2 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering	3	0	0	3	PE
5	Research Methodology and IPR	3	0	0	2	HS
6	Advanced Data Structures & Algorithms Lab	0	0	4	2	PC
7	Advanced Computing Lab	0	0	4	2	PC
8	Audit Course-1* English for Research Paper Writing Disaster Management Sanskrit for Technical Knowledge Value Education	2	0	0	0	AC
	Total	**17**	**0**	**8**	**18**	

I Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Machine learning	3	0	0	3	PC
2	MEAN Stack Technologies	3	0	0	3	PC
3	Program Elective-3 1. Advanced Databases and Mining 2. Ad Hoc & Sensor Networks 3. Soft Computing	3	0	0	3	PE
4	Program Elective-4 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing	3	0	0	3	PE
5	Machine Learning with python lab	0	0	4	2	PC
6	MEAN Stack Technologies Lab	0	0	4	2	PC
7	Mini Project with Seminar	2	0	0	2	MP
8	Audit Course-2 * Constitution of India Pedagogy Studies Stress Management by Yoga Personality Development through	2	0	0	0	AC
	Total	**16**	**0**	**8**	**18**	

II Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Program Elective-5 1. Deep Learning 2. Social Network Analysis 3. MOOCs-1 (NPTEL/SWAYAM) 12 Week Program related to the programme which is not listed in the course structure	3	0	0	3	PE
2	Open Elective 1. MOOCs-2 (NPTEL/SWAYAM)-Any 12 Week Course on Engineering/ Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	3	0	0	3	OE
3	Dissertation-I/ Industrial Project	0	0	20	10	PJ
	Total	**6**	**0**	**20**	**16**	

II Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Dissertation-II	0	0	32	16	PJ
	Total	**0**	**0**	**32**	**16**	

B.TECH-ECE-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – I	4	-	-	3	HSMC
2	Mathematics - I	4	-	-	3	BSC
3	Mathematics -II (Numerical Methods and Complex Variables)	4	-	-	3	ESC
4	Applied Physics	4	-	-	3	BSC
5	Computer Programming	4	-	-	3	ESC
6	Engineering Drawing	1	-	3	3	ESC
7	English - Communication Skills Lab -1	-	-	3	2	HSMC
8	Applied / Engineering Physics Laboratory	-	-	3	2	BSC
9	Applied / Engineering Physics – Virtual Labs - Assignments	-	-	2	0	ESC
10	Engineering Workshop& IT Workshop	-	-	3	2	BSC
	Total Credits	21		14	24	

I Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – II	4	--	--	3	HSMC
2	Mathematics -III	4	--	--	3	BSC
3	Applied Chemistry	4	--	--	3	BSC
4	Electrical and Mechanical Technology	4	--	--	3	ESC
5	Environmental Studies	4	--	--	3	HS
6	Data Structures	4	--	--	3	ESC
7	Applied / Engineering Chemistry Laboratory	--	--	3	2	BSC
8	English - Communication Skills Lab -2	--	--	3	2	HS
9	Computer Programming Lab	--	--	3	2	ESC
	Total Credits	24		9	24	

II Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Electronic Devices and Circuits		--	--	3	PCC
2	Switching Theory and Logic Design		--	--	3	PCC
3	Signals and Systems		--	--	3	PCC
4	Network Analysis		--	--	3	PCC
5	Random Variables and Stochastic Process		--	--	3	PCC
6	Managerial Economics & Financial Analysis		--	--	3	HSMC
7	Electronic Devices and Circuits Lab	-	--	3	2	PCC
8	Networks & Electrical Technology Lab	-	--	3	2	PCC
	Total Credits	24		6	22	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Electronic Circuit Analysis	4	-	-	3	PCC
2	Control Systems	4	--	--	3	PCC
3	Electromagnetic Waves and Transmission Lines	4	--	--	3	PCC
4	Analog Communications	4	--	--	3	PCC
5	Pulse and Digital Circuits	4	--	--	3	PCC
6	Management Science	4	--	--	3	HSMC
7	Electronic Circuit Analysis Lab	--	--	3	2	PCC
8	Analog Communications Lab	--	--	**3**	**2**	PCC
	Total Credits	24		6	22	

III Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Computer Architecture and Organization	4	--	--	3	PCC
2	Linear I C Applications	4	--	--	3	PCC
3	Digital I C Applications	4	--	--	3	PCC
4	Digital Communications	4	--	--	3	PCC
5	Antenna and Wave Propagation	4	--	--	3	PCC
6	Pulse and Digital Circuits Lab	--	--	3	2	PCC
7	Linear I C Applications Lab	--	--	3	2	PCC
8	Digital I C Applications Lab	--	--	3	2	PCC
MC	Professional Ethics & Human Values	--	3	--	--	HSMC
	Total Credits	20	3	9	21	

III Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Micro Processors & Micro Controllers	4	--	--	3	PCC
2	Micro Wave Engineering	4	--	--	3	PCC
3	VLSI Design	4	--	--	3	PCC
4	Digital Signal Processing	4	--	--	3	PCC
5	OPEN ELECTIVE 1. OOPs through Java 2. Data Mining 3. Industrial Robotics 4. Power Electronics 5. Bio-Medical Engineering 6.Artificial Neural Networks	4	-	-	3	OEC
6	VLSI Lab			3	2	PCC
7	Digital Communications Lab			3	2	PCC
MC	IPR & Patents	--	2	--	--	HSMC
	Total Credits	20	2	6	21	

IV Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Radar Systems	4	--	--	3	PCC
2	Digital Image Processing	4	--	--	3	PCC
3	Computer Networks	4	--	--	3	PCC
4	Optical Communications	4	--	--	3	PCC
5	**Elective I** 1.TV Engineering 2. Electronic Switching Systems 3.System Design through Verilog	4	--	--	3	PEC
6	**Elective II** 1.Embedded Systems 2. Analog IC Design 3.Network Security & Cryptography	4	--	--	3	PEC
7	Micro Wave Engineering & Optical Lab	--	--	2	2	PCC
8	Digital Signal Processing Lab	--	--	2	2	PCC
	Total Credits	24		4	22	

IV Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Cellular Mobile Communications	4	-	--	3	PCC
2	Electronic Measurements andInstrumentation	4	-	--	3	PCC
3	Satellite Communications	4	-	--	3	PCC
4	**Elective III** 1.Wireless sensors & Networks 2. Digital IC Design 3. Operating Systems	4	-	--	3	PEC
5	Seminar	--		--	2	PROJ
6	Project	--	-	--	10	PROJ
	Total Credits	16	3		24	

M.TECH-EMBEDDED SYSTEM-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Embedded System Design	3	0	0	3	PCC
2	Microcontrollers and Programmable Digital Signal Processors	3	0	0	3	PCC
3	**Elective 1** 1. Digital Signal and Image Processing 2. Parallel Processing 3. VLSI signal processing	3	0	0	3	PEC
4	**Elective II** 1.1. Programming Languages for Embedded Systems 2. System Design with Embedded Linux 3.CAD of Digital System	3	0	0	3	PEC
5	Embedded System Design Lab(using Embedded-C)	0		4	2	PCC
6	Microcontrollers and Programmable Digital Signal Processors Lab	0		4	2	PCC
7	Research methodology and IPR	2	0	0	0	HSMC
8	**Audit course-1** English for Research Paper Writing Disaster Management Sanskrit for Technical Knowledge Value Education	2	0	0	0	AUD 1
	Total Credits				18	

I Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Digital System Design	3	0	0	3	PCC
2	Real Time Operating Systems	3	0	0	3	PCC
5	**Elective III** 1. Memory Architectures 2. SoC Design 3. Sensors &Actuators	3	0	0	3	PEC
6	**Elective IV** 1. Communication Buses and Interfaces 2. Network Security and Cryptography 3. Physical design automation	3	0	0	3	PEC
7	Real Time Operating Systems Lab	0	0	4	2	PCC
8	Digital System Design Lab	0	0	4	2	PCC
9	Mini Project	0	0	4	2	MP
10	Audit Course – 2 Constitution of India Pedagogy Studies Stress Management by Yoga Personality Development through Life Enlightenment Skills	2	0	0	0	AUD 2
	Total Credits				18	

II Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	1. IOT and its Applications 2. Hardware Software co-design 3. Artificial Intelligence	3	--	--	3	PEC
2	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy	3	--	--	3	OE
3	Dissertation Phase -I /Industrial Project (to be continued and evaluated next semester)	0	--	20	10	Dissertation
	Total Credits				20	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Project/ Dissertation Phase-II (continued from III semester)	--	--	32	16	Dissertation
	Total Credits				16	

B.TECH-EEE-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	English – I	4	0		3	HS
2	Mathematics - I	4	0		3	BS
3	Engineering Chemistry	4	0		3	BS
4	Engineering Mechanics	4	0		3	ES
5	Computer Programming	4	0		3	ES
6	Environmental Studie	4	0		3	HS
7	Engineering/Applied Chemistry Laboratory		0	3	2	BS
8	English - Communication Skills Lab - I		0	3	2	ES
9	Computer Programming Lab		0	3	2	MC
	Total Credits				24	

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

II Year - I Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Electrical Circuit Analysis - II	3	-	--	3	EE
2	Electrical Machines-I	3	-	--	3	EE
3	Electronic Devices and Circuits	3	-	--	3	ES
4	Electro Magnetic Fields	3	-	--	3	EE
5	Thermal and Hydro Prime movers	3	-	--	3	ES
6	Managerial Economics & Financial Analysis	3	-	--	3	BS
7	Thermal and Hydro Laboratory	--	-	3	1.5	ES
8	Electrical Circuits Laboratory	--	-	3	1.5	EE
9	Essence of Indian Traditional Knowledge	3	-	--	0	MC
	Total Credits				21	

II Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Electrical Measurements & Instrumentation	3	--	--	3	EE
2	Electrical Machines-II	3	--	--	3	EE
3	Digital Electronics	3	--	--	3	ES
4	Control Systems	3	--	--	3	EE
5	Power Systems-I	3	--	--	3	EE
6	Signals and Systems	3	--	--	3	EE
7	Electrical Machines -I Laboratory	--	--	3	1.5	EE
8	Electronic Devices & Circuits Laboratory	--	--	3	1.5	EE
9	Professional Ethics and Human Values	3	0	0	0	MC
	Total Credits				21	

III Year - I Semester						
S. No.	subjects	L	T	P	Credits	Category
1	Power Systems-II	3	-	--	3	EE
2	Power Electronics	3	-	--	3	EE
3	Linear IC Applications	3	-	--	3	ES
4	Digital Signal Processing	3	-	--	3	EE
5	Microprocessors and Microcontrollers	3	-	--	3	EE
6	Electrical Machines-II Laboratory	--	-	3	1.5	EE
7	Control Systems Laboratory	--	-	2	1	EE
8	Electrical Measurements & Instrumentation	--	-	3	1.5	EE
9	Laboratory	--	-	1	1	MC
	Socially Relevant Projects					
	Total Credits				20	

III Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Electric Drives	3	-	--	3	EE
2	Power System Analysis	3	-	--	3	EE
3	Data Structures	3	-	--	3	ES
4	Digital Control Systems	3	-	--	3	EE
5	Elective - I	3	-	--	3	EL
6	Open Elective - I	3	-	--	3	OE
7	Power Electronics Laboratory	--	-	3	1.5	EE
8	Microprocessors & Microcontrollers Laboratory	--	-	3	1.5	EE
9	Employability Skills	3	-	--	0	MC
	Total Credits				21	

IV Year - I Semester						
S. No.	subjects	L	T	P	Credits	Category
1	Switchgear & Protection	3	-	--	3	EE
2	OOPs through JAVA	3	-	--	3	ES
3	Renewable Energy Systems	3	-	--	3	EE
4	Elective – II	3	-	--	3	EL
5	Elective - III	3	-	--	3	EL
6	Linear & Digital IC Applications Laboratory	--	-	2	1	ES
7	Power Systems& Simulation Laboratory	--	-	2	1	EE
8	Industrial Training /Skill Development Programmes / Research Project	--	-	2	1	Project
9	Project-I		-	4	2	Project
	Total Credits				20	

IV Year - II Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Power System Operation & Control	3	--	--	3	EE
2	Open Elective - II	3	--	--	3	OE
3	Elective - IV	3	--	--	3	EL
4	Project-II	--	--	16	8	Project
	Total Credits	0			17	

M.TECH- POWER ELECTRONICS AND ELECTRICAL DRIVES

I YEAR I SEM						
S.No	**Category**	**Course Name**	**L**	**T**	**P**	**C**
1	PC	ElectricalMachineModelingand Analysis	3	0	0	3
2	PC	AnalysisofPowerElectronicConverters	3	0	0	3
3	PE	Elective– I i. ModernControlTheory ii. PowerQualityand CustomPowerDevices iii. ProgrammableLogicControllers& Applications	3	0	0	3
4	PE	Elective– II i. ArtificialIntelligenceTechniques ii. RenewableEnergyTechnologies iii. HVDC TransmissionandFlexible ACTransmissionSystems	3	0	0	3
5		ResearchMethodologyand IPR	2	0	0	2
6		PowerElectronicsSimulationLaboratory	0	0	4	2
7		PowerConvertersLaboratory	0	0	4	2
8		AuditCourse– 1	2	0	0	0
		Total credits				18

I Year - II Semester						
S.No	**CourseName**	**L**	**T**	**P**	**C**	**Category**
1	SwitchedModePowerConversion	3	0	0	3	PC
2	PowerElectronicControlofElectricalDrives	3	0	0	3	PC
3	Elective– III i. Control& Integration of RenewableEnergySystems ii. HybridElectricVehiclesiii.Digi talControlSystems	3	0	0	3	PE
4	Elective– IV i. AdvancedDigitalSignalProcessing ii. Applicationsof PowerConverters iii. Microcontrollers	3	0	0	3	PE
5	ElectricDrivesSimulationLaboratory	0	0	4	2	
6	ElectricDrivesLaboratory	0	0	4	2	
7	MiniProjectwithSeminar	0	0	4	2	
8	AuditCourse– 2	2	0	0	0	
	Total credits				18	

II Year - I Semester						
S.No	**CourseName**	**L**	**T**	**P**	**C**	**Category**
1	ProgramElective– V i. DigitalSignalProcessingControlledDrives ii. SmartGridTechnologies iii. Modeling&Simulationof PowerElectronicSystems	3	0	0	3	PE
2	OpenElectivei.IndustrialSafety ii.EnergyAudit,Conservation&Managementiii.Composite Materials	3	0	0	3	OE
3	DissertationPhase-I (to becontinuedandevaluatednextsemester)	0	0	20	10	
	Total credits				16	

II Year - II Semester				
S.No	**CourseName**	**T**	**P**	**C**
1	DissertationPhase-II (continued fromIIIsemester)	0	32	16
	Total credits			16

B.TECH-AGRICULTURAL ENGINEERING-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	English – I	4			3	HS
2	Mathematics - I	4			3	BS
3	Mathematics - II (Mathematical methods)	4			3	BS
4	Engineering Physics	4			3	BS
5	Environmental Studies	4			3	HS
6	Engineering Drawing	4			3	ES
7	English - Communication Skills Lab - I			3	2	BS
8	Engineering/applied physics laboratory			3	2	HS
9	Engineering/applied physics laboratory - virtual labs - assignments			2		ES
10	Engineering workshop and IT workshop			3	2	ES
	Total Credits				24	

I Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	English – II	4			3	HS
2	Mathematics – III	4			3	BS
3	Engineering Chemistry	4			3	BS
4	Engineering Mechanics	4			3	ES
5	Principles of Soil Science and Agronomy	4			3	PC
6	Computer programming	4			3	BS
7	Engineering/applied Chemistry laboratory			3	2	HS
8	English - Communication Skills Lab - II			3	2	BS
9	C Programming Lab			3	2	ES
	Total Credits				24	

II Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Fluid Mechanics and Open Channel Hydraulics	4			3	ES
2	Renewable Energy Sources	4			3	ES
3	Ground Water Hydrology, Wells and Pumps	4			3	PC
4	Properties and Strength of Materials	4			3	ES
5	Electrical Systems	4			3	ES
6	Surveying	4			3	ES
7	Fluid Mechanics and Open Channel Hydraulics Lab			3	2	ES
8	Surveying Lab			3	2	ES
	Total Credits				22	

II Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Theory of structures	4			3	ES
2	Heat and mass transfer	4			3	ES
3	Theory of machines	4			3	ES
4	Soil machanics	4			3	ES
5	Surface water hydrology	4			3	PC
6	Farm power and tractor systems	4			3	PC
7	Soil science and agronomy field lab			3	2	PC
8	Machine drawing and computer graphics lab			3	2	ES
	Total Credits				22	

III Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Thermodynamics and Refrigeration Systems	4			3	ES
2	Soil and Water Conservation Engineering	4			3	PC
3	Agricultural Process Engineering	4			3	PC
4	Engineering Properties of Biological Materials and Food Quality	4			3	PC
5	Managerial Economics and Financial Analysis	4			3	HS
6	Agricultural Process Engineering lab			3	2	PC
7	Advanced english communications skills lab			3	2	HS
8	Field operations and maintenance of tractors lab - I			3	2	PC
MC9	IPR& Patents		2			HS
	Total Credits				21	

III Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Irrigation and drainage engineering	4			3	PC
2	Farm machinery and equipment - I	4			3	PC
3	Design of soil and water conservation and farm structures	4			3	PC
4	Diary and food engineering	4			3	PC
5	OPEN ELECTIVE 1. Operation research 2. Digital control systems 3. Robotics & Automation 4. Industrial pollution control engineering 5.Finite element method 6. Water resources systems planning and management	4			3	OE
6	Farm machinery lab -I			3	2	PC
7	Field operations and maintenance of tractors lab - II			3	2	PC
8	Soil and water engineering lab			3	2	PC
MC9	Professional ethics and human values					HS
	Total Credits				21	

IV Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Micro Irrigation Engineering	4			3	PC
2	Farm Machinery and Equipments – II	4			3	PC
3	Post Harvest Engineering for Horticulture Produce	4			3	PC
4	Mechanical Measurements and Instrumentation	4			3	ES
5	ELECTIVE - I 1. Seed Processing and Storage Engineering 2. Green House Technologies 3. Food Processing Plant Design and Layout	4			3	PE
6	ELECTIVE - II 1. Watershed Management 2. Food Packaging Technology 3. Minor Irrigation and Command area	4			3	PE
7	Farm Machinery Lab - 2			3	2	PC
8	Dairy and Food Engineering Lab			3	2	PC
	Total Credits				22	

IV Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Design of Agricultural Machinery	4			3	PC
2	Agricultural Extension Techniques and Business Management	4			3	HS
3	Agro Industries and Bi-product Utilization	4			3	PC
4	ELECTIVE - III 1. GIS and Remote Sensing 2. Human Engineering and Safety 3. Production Technology of Agricultural Machinery	4			3	PE
5	Seminar	4		3	2	SEM
6	Project work			15	10	PROJ
	Total Crdits				24	

MBA-PROGRAM STRUCTURE

I Year - I Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Principles of Management				3	PC
2	Managerial Economics				3	PC
3	Accounting for Managers				3	PC
4	Managerial Communication & Soft skills				3	PC
5	Business Environment				3	PC
6	Quantitative Analysis for Business Decision				3	PC
7	IT – LAB				3	PC
	Total Credits				21	

I Year - II Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Financial Management				3	PC
2	Human Resource Management				3	PC
3	Marketing Management				3	PC
4	Production and Operations Management				3	PC
5	Business Research Methods				3	PC
6	Organizational Behavior				3	PC
7	Mini Project *				2	PROJ
	Seminar on Mini Project				2	PROJ
	Total Credits				22	

II Year - III Semester						
S. No.	Subjects	L	T	P	Credits	Category
1	Strategic Management				3	PC
2	Legal Aspects of Business				3	PC
3	Business Ethics & Corporate Governance				3	PC
4	**Elective-1** Leadership Management Security Analysis & Portfolio Managementt Consumer Behavior				9	PE
5	**Elective-2** Compensation and Reward Management Banking and Insurance Management Retail Management				9	PE
6	**Elective-3** Performance Management Advance Management Accounting Customer Relationship Management				9	PE

7	**Elective-4** Strategic Human Resource Management Strategic Financial Management Strategic Marketing Management				9	PE
	Total Credits				**45**	

II Year - IV Semester						
S. No.	**Subjects**	**L**	**T**	**P**	**Credits**	**Category**
1	Logistic and Supply Chain Management	4			3	PC
2	Entrepreneurship Development	4			3	PC
3	**Elective-5** Organizational Development & Change - Management Financial Markets and Services Services Marketing				9	PE
6	Project				10	PROJ
4	**Elective-6** Global HRM Global Financial Management Promotional Distribution Management				9	PE
5	**Elective-7** Labor Welfare & Legislation Risk Management Global Marketing Management				9	PE
6	**Elective-8** Management of Industrial Relations Tax Management Supply Chain Management				9	PE
7	Major Project & Comprehensive Viva				8	PROJ
	Total Credits				**50**	

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