2007-08

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

B.TECH ELECTRICAL AND ELECTRONICS ENGINEERING

IV year – I Semester

Course Structure

CODE	SUBJECT	T	P	C
	Neural Networks and Fuzzy Logic	4+1*	-	4
	Power Semiconductor Drives	4+1*	-	4
	Power System Analysis	4+1*	-	4
	Power System Operation and Control	4+1*	-	4
	ELECTIVE – I	4+1*	-	4
	HVDC Transmission			
	EHV AC Transmission			
	High Voltage Engineering			
	ELECTIVE – II	4+1*	-	4
	Reliability Engineering and Application to Power Systems			
	Non-Conventional Sources of Energy			
	Electrical Distribution Systems			
	Microprocessors and Microcontrollers Lab	-	3	2
	Electrical Measurements Lab	-	3	2
	Total	30	6	28

IV year – II Semester

Course Structure

CODE	SUBJECT	T	P	C
	Utilization of Electrical Energy	4+1*	-	4
	ELECTIVE – III	4+1*	-	4
	Advanced Control Systems			
	Digital Control Systems			
	Optimization Techniques			
	ELECTIVE – IV	4+1*	-	4
	Programmable Logic Controllers			
	Object oriented programming			
	Database Management Systems			
	Seminar	-	-	2
	Industry Oriented Mini Project	-	-	2
	Comprehensive Viva	-	-	2
	Project Work	-	-	10
	Total	15	-	28

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING

IV Year   **I Semester**

COURSE STRUCTURE

Code	Subject	T	P	C
	Computer Networks	4+1*	-	4
	Electronic Measurements & Instrumentation	4+1*	-	4
	Cellular and Mobile Communications	4+1*	-	4
	Radar Systems	4+1*	-	4
	Elective-I	4+1*	-	4
	Micro Controllers and Applications			
	Television Engineering			
	Operating Systems	4+1*	-	4
	Elective-II			
	Digital Image Processing			
	Satellite Communications			
	Data Base Management Systems			
	Microwave and Optical Communications Lab.	-	3	2
	Digital Signal Processing Lab	-	3	2
		30	6	28

IV Year   **II Semester**

COURSE STRUCTURE

Code	Subject	T	P	C
	Optical Communications	4+1*	-	4
	Elective-III	4+1*	-	4
	Embedded and Real Time Systems			
	Bio-Medical Instrumentation			
	Digital Design Through Verilog			
	Elective-IV	4+1*	-	4
	Wireless Communications and Networks			
	DSP Processors and Architectures			
	Artificial Neural Networks			
	Industry Oriented Mini Project	-	-	2
	Seminar	-	-	2
	Project Work			10
	Comprehensive Viva	-	-	2
		15	-	28

Note : All End Examinations (Theory and Practical) are of three hours duration.
* - Tutorial   T – Theory   P – Practical   C – Credits   D - Drawing

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

B. TECH. COMPUTER SCIENCE AND ENGINEERING

IV Year

I Semester

COURSE STRUCTURE

Code	Subject	T	P	C
	Network Programming	4+1*	-	4
	Web Technologies	4+1 *	-	4
	Data Warehousing and Data Mining	4+1 *	-	4
	Advanced Computer Architecture	4+1 *	-	4
	ELECTIVE – I :	4+1 *	-	4
	Embedded Systems			
	Mobile Computing			
	Multimedia and Application Development			
	ELECTIVE – II :	4+1 *	-	4
	Software Project Management			
	Advanced Computing Concepts			
	Network Management Systems			
	Network Programming Lab	-	3	2
	Web Technologies Lab	-	3	2
	Total	30	6	28

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

B. TECH. COMPUTER SCIENCE AND ENGINEERING

IV Year   **II Semester**

COURSE STRUCTURE

Code	Subject	T	P	C
	Management Science	4+1*	-	4
	ELECTIVE III :	4+1*	-	4
	Image Processing			
	E-Commerce			
	Distributed Databases			
	ELECTIVE – IV :	4+1 *	-	4
	Virtual Reality			
	Human Computer Interaction			
	Design Patterns			
	Industry Oriented Mini Project	-	-	2
	Seminar	-	-	2
	Project Work	-	-	10
	Comprehensive Viva	-	-	2
	Total	**15**	**-**	**28**

Note :   All End Examinations (Theory and Practical) are of three hours duration.

* - Tutorial
T - Theory
P - Practical
C - Credits

B.TECH. MECHANICAL ENGINEERING

IV Year   COURSE STRUCTURE   **Semester I**

CODE	SUBJECT	T	P/D	C
	Operations Research	4+1*	0	4
	Data Base Management Systems	4+1*	0	4
	Finite Element Methods	4+1*	0	4
	Instrumentation and Control Systems	4+1*	0	4
	ELECTIVE – I	4+1*	0	4
	Robotics			
	Computational Fluid Dynamics			
	Mechatronics			
	Advanced Data Structures and Algorithms			
	ELECTIVE – II	4+1*	0	4
	Unconventional Machining Processes			
	Nonconventional Sources of Energy			
	Power Plant Engineering			
	Unix and Shell programming			
	Heat Transfer Lab	0	3	2
	Production Drawing Practice and Instrumentation Lab	0	3	2
	TOTAL	30	6	28

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

MECHANICAL ENGINEERING

B.Tech – IV   **Semester –II**

CODE	SUBJECT	T	P/D	C
	Production Planning and Control	4+1*	0	4
	ELECTIVE – III	3+1*	0	3
	Neural Networks and Fuzzy Logic Systems			
	Tribology			
	Nanotechnology			
	Computer Organization and Architecture			
	ELECTIVE – IV	3+1*	0	3
	Principles of Entrepreneurship			
	Automation in Manufacturing			
	Interactive Computer Graphics			
	Operating System Concepts			
	CAD/CAM Lab	0	3	2
	Industry Oriented Mini Project	0	0	2
	Seminar	0	0	2
	Project Work	0	0	10
	Comprehensive Viva	0	0	2
	TOTAL	13	3	28

Note : All End Examinations (Theory and Practical) are of three hours duration.
* - Tutorial
T - Theory
P – Practical/Drawing
C - Credits

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY,KAKINADA
B. TECH. CIVIL ENGINEERING
COURSE STRUCTURE
IV YEAR I Semester

Code	Subject (Click on subject to view Syllabus)	P	C	C
1.	Geotechnical Engineering -II	4	--	4
2.	Design & Drawing of Irrigation Structures	4	--	4
3	Environmental Engineering	4	--	4
4.	Remote Sensing and GIS Applications	4	--	4
5.	ELECTIVE-I	4	--	4
a.	Earthaquake Resistant Design			
b.	Ground Improvement Techniques			
c.	Urban Transportation Planning			
6.	OPEN ELECTIVE	4	--	4
a.	Air Pollution and Control			
b.	Disaster Management			
c.	Industrial Water & Waste Water Management			
d.	Architercture and Town Planning			
7.	GIS and CAD Lab	--	2	2
8.	Water and Wastewater Engineering Lab	--	2	2
	TOTAL			28

IV YEAR I I Semester

Code	Subject (Click on subject to view Syllabus)	P	C	C
1.	Estimatin, Specification & Contracts	4	--	4
5.	ELECTIVE-II	4	--	4
a.	Advanced Structural Design			
b.	Ground Water Development and Management			
c.	Environmental Impact Assessment and Management			
3.	ELECTIVE - III	4	--	4
a.	Water Shed Management			
b.	Finite Element Methods			
c.	Pavement Analysis Design and Evaluation			
4.	ELECTIVE - IV	4	--	4
a.	Soil Dynamics and Machine Foundations			
b.	Advanced Structural Analysis			
c.	Water Resources System Planning and Management			
5.	Project Work	4	--	4
	TOTAL			28

Agricultural Engineering
III YEAR II SEMESTER

S. No	Subject	T	P	Credits
1	Irrigation and Drainage Engineering	4	1	3
2	Farm Machinery and Equipment – I	4	1	3
3	Design of Soil, Water Conservation and Farm Structures	4	1	3
4	Dairy and Food Engineering	4	1	3
5	Theory of Structures	4	1	3
6	Open Elective Operations Research Digital Control systems Robotics & Automation Industrial Pollution Control Engineering Advanced Separation Technology Mechatronics Finite Element Method Soil Dynamics and Machine Foundations Water Resources System Planning and Management Green Technologies	4	1	3
7	Agricultural Process Engineering Lab	—	3	2
8	Soil and Water Engineering Lab	—	3	2
	Total			22

IV YEAR I SEMESTER

S. No	Subject	T	P	Credits
1	Micro Irrigation Engineering	4	1	3
2	Farm Machinery and Equipments – II	4	—	3
3	Post Harvest Engineering for Horticulture Produce	4	1	3
4	Mechanical Measurements and Instrumentation	4	1	3
5	ELECTIVE – I Seed Processing and Storage Engineering Managerial economics & financial Analysis Food Processing Plant Design and Layout	4	1	3

S.No	Subject	T	P	Credits
6	**ELECTIVE – II** Watershed Management Food Packaging Technology Computational Fluid Dynamics	4	1	3
7	Field Operation and Maintenance of Tractors and Farm Machinery Lab	—	3	2
8	Dairy and Food Engineering Lab	—	3	2
	Total	21	11	22

IV YEAR II SEMESTER

S. No	Subject	T	P	Credits
1	Design of Agricultural Machinery	4	1	3
2	**ELECTIVE – III** GIS and Remote Sensing Human Engineering and Safety Production Technology of Agricultural Machinery	4	1	3
3	**ELECTIVE – IV** Minor Irrigation and Command area development Hydraulic Devices and Control Principles of Entrepreneurship	4	1	3
4	Agro Industries and Bi-product Utilization	4	0	3
5	Project Work	—	15	9
	Total			21

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DEPARTMENT OF CIVIL ENGINEERING
Revised course structure for
M.Tech (Structural Engineering) (DT)
I Year – I SEMESTER   Programme

S.No	Name of the Subject	L	P	C
1	Advanced Mathematics	4		3
2	Theory of Elasticity	4	—	3
3	Matrix Analysis of Structures	4	—	3
4	Structural Dynamics	4	—	3
5	Elective –I	4	—	3
	a) Experimental Stress Analysis			
	b) Sub-Structure Design			
	c) Structural Optimization			
6	Elective – II	4	---	3
	a) Repair and Rehabilitation of Structures			
	b) Analysis and Design of Tall Buildings			
	c) Plastic Analysis and Design			
7	Advanced Structural Engineering Laboratory	—	3	2
	Total			**20**

II SEMESTER

S.No	Name of the Subject	L	P	C
1	Finite Element Method	4		3
2	Earthquake Resistant Design	4	—	3
3	Stability of Structures		—	3
4	Theory of Plates & Shells	4	—	3
5	Elective - III	4	—	3
	a) Pre-stressed Concrete		—	
	b) Mechanics of Composite Materials			
	c) Fracture Mechanics			
6	Elective – IV	4	---	3
	a) Industrial Structures			
	b) Bridge Engineering			
	c) Earth Retaining Structures			
7	CAD Laboratory	—	3	2
	Total			**20**

Computer Science & Technology

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING
Specialization: COMPUTER SCIENCE & TECHNOLOGY
COURSE STRUCTURE

I SEMESTER

S.NO	SUBJECT	L	P	C
1	ADVANCED DATA STRUCTURES	4	-	3
2	ADVANCED GRAPH THEORY	4	-	3
3	PARALLEL ALGORITHMS	4		3
4	DATA MINING AND KNOWLEDGE DISCOVERY	4	-	3
5	ADVANCED COMPUTER NETWORKS	4	-	3
6	DISTRIBUTED PROGRAMMING APPLICATIONS THROUGH JAVA	4	-	3
7	CST LAB I	-	3	2
	TOTAL			20

II SEMESTER

S.NO.	SUBJECT	L	P	C
1	ADVANCED COMPUTER ALGORITHMS	4	-	3
2	COMPUTER SYSTEM ENGINEERING	4	-	3
3	ADVANCED UNIX PROGRAMMING	4	-	3
4	Elective I MIDDLEWARE TECHNOLOGIES HEALTH INFORMATICS SOFT COMPUTING	4	-	3
5	Elective II INFORMATION SECURITY INFORMATION RETRIEVAL SYSTEMS VOIP	4	-	3
6	Elective III PATTERN RECOGNITION AND IMAGE PROCESSING MACHINE LEARNING CLOUD COMPUTING	4	-	3
7	CST LAB 2		3	2
	TOTAL			20

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Specialization: Embedded Systems

COURSE STRUCTURE

I SEMESTER

S.No	Name of the Subject	L	P	C
1	1. Embedded System Design	4	-	3
2	2. Microcontrollers for Embedded System Design	4	-	3
3	3. Embedded Real Time Operating Systems	4	-	3
4	4. Embedded - C	4	-	3
5	Elective I 1. Digital System Design 2. Network Security & Cryptography 3. Advanced Computer Architecture	4	-	3
6	Elective II 1. Embedded Computing 2. Soft Computing Techniques 3. Advanced Operating Systems	4	-	3
7	Laboratory 1. Embedded C-Laboratory	-	3	2
	TOTAL			20

II SEMESTER

1	1. Hardware Software Co-Design	4	-	3
2	2. Digital Signal Processors and Architecture	4	-	3
3	3. Embedded Networking	4	-	3
4	4. CPLD and FPGA Architectures and Applications	4	-	3
5	Elective III 1. Sensors and Actuators 2. Micro Electro Mechanical System Design 3. Internet Protocols	4	-	3
6	Elective IV 1. System on Chip Design 2. Wireless LANs and PANs	4	-	3

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

EEE

Common for the following Specializations:
Power Electronics
Power Industrial Drives
Power and Industrial Drives
Power Electronics and Electrical Drives
Power Electronics and Drives
Power Electronics and Systems
Electrical Machines and Drives
Power Electronics and Control

COURSE STRUCTURE

M.Tech I YEAR I SEMESTER

S. No.	Subject	L	P	Credits
1	Electrical Machine Modeling & Analysis	4	--	3
2	Analysis of Power Electronic Converters	4	--	3
3	Electric Drives - 1	4	--	3
4	Flexible AC Transmission Systems	4	--	3
5	Elective – I i. Modern Control Theory ii. Power Quality iii. Optimization Techniques	4	--	3
6	Elective – II i. Energy Auditing, Conservation and Management ii. Artificial Intelligence Techniques iii. HVDC Transmission	4	--	3
7	Systems Simulation Lab	--	4	2
	Total Credits			**20**

4301
4302
4303

4305

5602
4309

II sem

SMPL
ED-II
DC

Specialization: SSP, DIP, CE&SP, IP
COURSE STRUCTURE

I SEMESTER

S.No	Name of the Subject	L	P	C
1	Coding Theory and Applications	4	-	3
2	Transform Techniques	4	-	3
3	Advanced Digital Signal Processing	4	-	3
4	Digital Data Communications	4	-	3
5	Elective I Statistical Signal Processing Network Security and Cryptography Pattern Recognition Principles	4	-	3
6	Elective II Embedded and Real Time Systems Soft Computing Techniques Object Oriented Programming	4	-	3
7	Laboratory			
	Signal Processing Laboratory	-	3	2

II SEMESTER

S.No	Name of the Subject	L	P	C
1	Adaptive Signal Processing	4	-	3
2	Image & Video Processing	4	-	3
3	Wireless Communication & Networks	4	-	3
4	DSP Processors and Architectures	4	-	3
5	Elective III RF Circuit Design Speech Processing Bio-Medical Signal Processing	4	-	3
6	Elective IV Internet Protocols Radar Signal Processing Detection and Estimation Theory	4	-	3
7	Laboratory			
	Advanced Signal Processing Laboratory	-	3	2

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

S.No	Code	Subject		L	T	P	Credits
1	TE 101(Core-1)	Advanced Fluid Mechanics		3	0	0	3
2	TE102(Core-2)	Computational Fluid Dynamics		3	0	0	3
3	Program Elective – I TE 103	TE 1031	Advanced I.C engine ,Electric and Hybrid vehicles	3	0	0	3
		TE 1032	Gas Dynamics				
		TE 1033	Cryogenic Engineering				
		TE 1034	Advanced Thermodynamics				
4	Program Elective – II TE 104	TE 1041	Gas Turbines	3	0	0	3
		TE 1042	Alternative Fuel Technologies				
		TE 1043	Energy Conservation and Management				
		TE 1044	Theory and Technology of Fuel Cells				
5	TE 105	Computational Fluid Dynamics Lab –I		0	0	3	2
6	TE 106	Thermal Engineering Lab-I		0	0	3	2
7	TE 107	Research Methodology And IPR		2	0	0	2
8	TE 108	Soft Skills		2	0	0	0
		Total					18

II -SEMESTER

S. No	Code	Subject		L	T	P	Credits
1	TE 201(Core-1)	Advanced Heat Transfer		3	0	0	3
2	TE 202(Core-2)	Thermal Measurements and Process Controls		3	0	0	3
3	Program Elective– III TE 203	TE 2031	Equipment Design for Thermal Systems	3	0	0	3
		TE 2032	Solar Energy Technologies				
		TE 2033	Advanced Power Plant Engineering				
		TE 2034	Combustion, Emissions and Environment				
4	Program Elective– IV TE 204	TE 2041	Jet Propulsion and Rocket Engineering	3	0	0	3
		TE 2042	Automotive Engineering				
		TE 2043	Modeling of I.C engines				
		TE 2044	Renewable Energy Technologies				
5	TE 205	Computational Fluid Dynamics Lab-II		0	0	3	2
6	TE 206	Thermal Engineering Lab-II		0	0	3	2
7	TE 207	Mini Project with Seminar		2	0	0	2

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I Semester

S.No.	Code	Subject		L	T	P	Credits
1	MD101	Advanced Mechanics of Solids		3	0	0	3
2	MD102	Mechanical Vibrations and Acoustics		3	0	0	3
3	Programme Elective – I	MD1031	Design of Modern Vehicle Systems	3	0	0	3
		MD 1032	Product Design				
	MD 103	MD 1033	Geometric Modeling				
		MD 1034	Fracture Mechanics				
		MD 1035	Advanced Mechanisms				
4	Programme Elective –II	MD 1041	Non-Destructive Evaluation	3	0	0	3
		MD 1042	Robotics				
		MD 1043	Design for Manufacturing & Assembly				
	MD 104	MD 1044	Multi Body Dynamics				
		MD 1045	Vision Systems and Image Processing				
5	MD105	Machine Dynamics Lab		0	0	4	2
6	MD106	Design Practice Lab-I		0	0	4	2
7	MD107	Research Methodology and IPR		2	0	0	2
8	MD108	Soft Skills		2	0	0	0
		Total					18

II Semester

S.No.	Code	Subject		L	T	P	Credits
1	MD201	Advanced Finite Element Methods		3	0	0	3
2	MD202	Advanced Machine Design		3	0	0	3
3	Programme Elective – III	MD 2031	Theory of Plasticity	3	0	0	3
		MD 2032	Signal Analysis and Condition Monitoring				
	MD 203	MD 2033	Computational Fluid Dynamics				
		MD 2034	Composite Materials				
		MD 2035	Soft Computing				
4	Programme Elective – IV	MD 2041	Experimental Techniques and data analysis	3	0	0	3
		MD 2042	Design with advanced Materials				
	MD 204	MD 2043	Mechatronics				
		MD 2044	Tribology				

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	4	0	0	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	Business Communication and Soft skills Lab	50	0	0	2	2
9	C-109	Information Technology – Lab1(Spreadsheet and Tally)	50	0	0	2	2
		Total	**800**	**28**	**0**	**4**	**32**

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