ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. AERONAUTICAL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES:

The graduates after completion of the degree will be able to

1. Apply knowledge in emerging and varied areas of Aerospace Engineering for higher studies, research, employment and product development.
2. Communicate their skills and have a sense of responsibility to protect the environment and have ethical conduct towards their profession and commitment to serve the society.
3. Exhibit managerial skills and leadership qualities while understanding the need for lifelong learning to be competent professionals

PROGRAMME OUTCOMES:

a. Ability to solve the engineering problems of mathematics, science and engineering
b. An engineering acumen in identifying, formulating, analyzing and solving complex engineering problems.
c. Developing processes, solutions to the problems which are safe socially, culturally and environmentally.
d. Ability to model, analyze and simulate operations of aircraft components and parts.
e. Capability of exhibiting sound theoretical and practical knowledge in core domains like aircraft structures, aerodynamics and propulsion and are able to solve problems related to airflow over fixed and rotary wing aircrafts.
f. Understanding of the impact of engineering solutions in a global, economic, environmental, and societal context
g. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
h. Commitment to professional ethics and responsibilities and norms as prescribed by the Aviation bodies such as DGCA .
i. Ability to work in team and have practical exposure in modeling of UAV, hovercrafts.
j. Ability to communicate effectively with the aerospace community using reports, presentations and documentations.
k. Ability to manage the projects in various aerospace fields of structure, propulsion, avionics.
l. A readiness to engage in lifelong learning and understanding of contemporary issues in aviation industry.

PEO / PO Mapping

PEO / PO	a	b	c	d	e	f	g	h	i	j	k	l
1	√	√	√	√	√		√					
2			√	√	√	√	√	√	√	√	√	√
3				√		√	√		√		√	√

Semester Course wise PO mapping

		Course Title	a	b	c	d	e	f	g	h	i	j	k	l
YEAR I	SEMESTER I	Communicative English						√				√		√
		Engineering Mathematics I	√	√	√	√								
		Engineering Physics	√	√	√	√	√		√					
		Engineering Chemistry	√	√	√	√	√		√					
		Problem Solving and Python Programming	√	√	√	√								
		Engineering Graphics	√	√	√	√	√		√		√		√	
		Problem Solving and Python Programming Laboratory	√	√	√	√	√		√					
		Physics and Chemistry Laboratory	√	√	√	√	√		√					
	SEMESTER II	Technical English						√				√		√
		Engineering Mathematics II	√	√	√	√								
		Materials Science	√		√		√	√	√					
		Basic Electrical, Electronics and Instrumentation Engineering	√		√				√					√
		Environmental Science and Engineering			√			√						
		Engineering Mechanics	√	√	√		√		√					
		Engineering Practices Laboratory	√	√	√		√		√					
		Basic Electrical, Electronics and Instrumentation Engineering Laboratory	√		√				√					√
YEAR II	SEMESTER III	Transforms and Partial Differential Equations	√	√	√	√								
		Manufacturing Technology	√		√		√	√	√					
		Aero Engineering Thermodynamics	√	√	√	√	√						√	
		Fluid Mechanics and Machinery	√	√	√	√	√						√	
		Strength of Materials for Mechanical Engineers	√	√	√	√	√						√	

		Elements of Aeronautical Engineering			√		√	√			√			√
		Strength of Materials and Fluid Mechanics & Machinery Laboratory	√	√	√	√	√						√	
		Thermodynamics Laboratory	√	√	√	√	√						√	
		Interpersonal Skills / Listening & Speaking						√				√		√
	SEMESTER IV	Numerical Methods	√	√	√	√								
		Aerodynamics - I	√	√	√	√	√						√	
		Aircraft Systems and Instruments			√		√	√	√		√			
		Mechanics of Machines	√	√	√			√						
		Aircraft Structures - I	√	√	√	√	√						√	
		Propulsion - I	√	√	√	√	√				√		√	
		Computer Aided Machine Drawing				√			√				√	
		Aerodynamics Laboratory	√	√	√	√	√						√	
YEAR III	SEMESTER V	Flight Dynamics	√	√	√	√		√			√			
		Aircraft Structures - II	√	√	√	√	√						√	
		Aerodynamics - II	√	√	√	√	√						√	
		Propulsion - II	√	√	√	√	√						√	
		Control Engineering	√	√	√								√	
		Open Elective - I												
		Aircraft Structures Laboratory	√	√	√	√	√						√	
		Propulsion Laboratory	√	√	√	√	√						√	
		Professional Communication						√				√		√
	SEM VI	Finite Element Methods	√	√	√	√	√	√	√		√		√	√
		Experimental Aerodynamics		√			√				√		√	

		Composite Materials and Structures	√	√	√		√		√					
		Experimental Stress Analysis	√	√			√				√		√	
		Aircraft Design		√		√	√	√	√	√		√		√
		Professional Elective – I												
		Aero Engine and Airframe Laboratory			√					√				√
		Computer Aided Simulation Laboratory		√	√	√	√	√	√		√		√	√
		Aircraft Design Project - I		√		√	√	√	√	√		√		√
YEAR IV	SEMESTER VII	Total Quality Management						√				√		√
		Avionics		√	√						√		√	
		Computational Fluid Dynamics	√	√	√	√	√	√	√		√		√	√
		Open Elective - II												
		Professional Elective – II												
		Professional Elective – III												
		Flight Integration Systems and Control Laboratory		√	√						√		√	
		Aircraft Systems Laboratory			√					√				√
		Aircraft Design Project - II		√		√	√	√	√	√		√		√
	SEMESTER VIII	Professional Elective – IV												
		Professional Elective – V												
		Project Work	√	√	√	√	√	√	√	√	√	√	√	√

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

B.E. AERONAUTICAL ENGINEERING

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8392	Manufacturing Technology	PC	3	3	0	0	3
3.	AE8301	Aero Engineering Thermodynamics	PC	3	3	0	0	3
4.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
5.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
6.	AE8302	Elements of Aeronautical Engineering	PC	3	3	0	0	3
PRACTICAL								
7.	CE8381	Strength of Materials and Fluid Mechanics & Machinery Laboratory	ES	4	0	0	4	2
8.	AE8311	Thermodynamics Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**30**	**20**	**0**	**10**	**25**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	AE8401	Aerodynamics - I	PC	3	3	0	0	3
3.	AE8402	Aircraft Systems and Instruments	PC	3	3	0	0	3
4.	PR8451	Mechanics of Machines	PC	3	3	0	0	3
5.	AE8403	Aircraft Structures - I	PC	5	3	2	0	4
6.	AE8404	Propulsion - I	PC	5	3	2	0	4
PRACTICAL								
7.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
8.	AE8411	Aerodynamics Laboratory	PC	2	0	0	2	1
			TOTAL	**29**	**19**	**4**	**8**	**24**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	AE8501	Flight Dynamics	PC	5	3	2	0	4
2.	AE8502	Aircraft Structures - II	PC	5	3	2	0	4
3.	AE8503	Aerodynamics - II	PC	3	3	0	0	3
4.	AE8504	Propulsion - II	PC	3	3	0	0	3
5.	AE8505	Control Engineering	PC	3	3	0	0	3
6.		Open Elective - I	OE	3	3	0	0	3
PRACTICAL								
7.	AE8511	Aircraft Structures Laboratory	PC	4	0	0	4	2
8.	AE8512	Propulsion Laboratory	PC	2	0	0	2	1
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**4**	**8**	**24**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	AE8601	Finite Element Methods	PC	3	3	0	0	3
2.	AE8602	Experimental Aerodynamics	PC	3	3	0	0	3
3.	AE8603	Composite Materials and Structures	PC	3	3	0	0	3
4.	AE8604	Aircraft Design	PC	3	3	0	0	3
5.	AE8605	Experimental Stress Analysis	PC	3	3	0	0	3
6.		Professional Elective – I	PE	3	3	0	0	3
PRACTICAL								
7.	AE8611	Aero Engine and Airframe Laboratory	PC	4	0	0	4	2
8.	AE8612	Computer Aided Simulation Laboratory	PC	4	0	0	4	2
9.	AE8613	Aircraft Design Project - I	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	GE8077	Total Quality Management	HS	3	3	0	0	3
2.	AE8751	Avionics	PC	3	3	0	0	3
3.	ME8093	Computational Fluid Dynamics	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
PRACTICAL								
7.	AE8711	Aircraft Systems Laboratory	PC	4	0	0	4	2
8.	AE8712	Flight Integration Systems and Control Laboratory	PC	4	0	0	4	2
9.	AE8713	Aircraft Design Project - II	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective – IV	PE	3	3	0	0	3
2.		Professional Elective – V	PE	3	3	0	0	3
PRACTICAL								
3.	AE8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 185

HUMANITIES AND SOCIAL SCIENCES (HS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	GE8077	Total Quality Management	HS	3	3	0	0	3

BASIC SCIENCE (BS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8251	Materials Science	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
8.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
9.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
10.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8392	Manufacturing Technology	PC	3	3	0	0	3
2.	AE8301	Aero Engineering Thermodynamics	PC	3	3	0	0	3
3.	AE8302	Elements of Aeronautical Engineering	PC	3	3	0	0	3
4.	AE8311	Thermodynamics Laboratory	PC	4	0	0	4	2
5.	AE8401	Aerodynamics - I	PC	3	3	0	0	3
6.	AE8402	Aircraft Systems and Instruments	PC	3	3	0	0	3
7.	PR8451	Mechanics of Machines	PC	3	3	0	0	3
8.	AE8403	Aircraft Structures - I	PC	5	3	2	0	4
9.	AE8404	Propulsion - I	PC	5	3	2	0	4
10.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
11.	AE8411	Aerodynamics Laboratory	PC	2	0	0	2	1
12.	AE8501	Flight Dynamics	PC	5	3	2	0	4
13.	AE8502	Aircraft Structures - II	PC	5	3	2	0	4
14.	AE8503	Aerodynamics - II	PC	3	3	0	0	3
15.	AE8504	Propulsion - II	PC	3	3	0	0	3
16.	AE8505	Control Engineering	PC	3	3	0	0	3
17.	AE8511	Aircraft Structures Laboratory	PC	4	0	0	4	2
18.	AE8512	Propulsion Laboratory	PC	2	0	0	2	1
19.	AE8601	Finite Element Methods	PC	3	3	0	0	3
20.	AE8602	Experimental Aerodynamics	PC	3	3	0	0	3
21.	AE8603	Composite Materials and Structures	PC	3	3	0	0	3
22.	AE8604	Aircraft Design	PC	3	3	0	0	3
23.	AE8611	Aero Engine and Airframe Laboratory	PC	4	0	0	4	2
24.	AE8612	Computer Aided Simulation Laboratory	PC	4	0	0	4	2
25.	AE8751	Avionics	PC	3	3	0	0	3
26.	ME8093	Computational Fluid Dynamics	PC	3	3	0	0	3
27.	AE8605	Experimental Stress Analysis	PC	3	3	0	0	3
28.	AE8711	Aircraft Systems Laboratory	PC	4	0	0	4	2
29.	AE8712	Flight Integration Systems and Control Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES FOR B.E. AERONAUTICAL ENGINEERING

SEMESTER VI, ELECTIVE – I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	PR8072	New Product Development	PE	3	3	0	0	3
2.	AE8001	Space Mechanics	PE	3	3	0	0	3
3.	AE8002	Aircraft General Engineering and Maintenance Practices	PE	3	3	0	0	3
4.	AE8003	Heat Transfer	PE	3	3	0	0	3
5.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

SEMESTER VII, ELECTIVES– II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AE8004	Helicopter Theory	PE	3	3	0	0	3
2.	AE8005	Aero Engine Maintenance and Repair	PE	3	3	0	0	3
3.	AE8006	UAV Systems	PE	3	3	0	0	3
4.	AE8007	Aircraft Materials	PE	3	3	0	0	3
5.	AE8008	Vibration and Elements of Aeroelasticity	PE	3	3	0	0	3
6.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VII, ELECTIVES – III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AE8009	Airframe Maintenance and Repair	PE	3	3	0	0	3
2.	AE8010	Fatigue and Fracture	PE	3	3	0	0	3
3.	PR8071	Lean Six Sigma	PE	3	3	0	0	3
4.	ME8097	Non Destructive Testing and Evaluation	PE	3	3	0	0	3
5.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3

SEMESTER VIII, ELECTIVES – IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AE8011	Hypersonic Aerodynamics	PE	3	3	0	0	3
2.	AE8012	Wind Tunnel Techniques	PE	3	3	0	0	3
3.	AE8013	Rockets and Missiles	PE	3	3	0	0	3
4.	AE8014	Structural Dynamics	PE	3	3	0	0	3
5.	AE8015	Industrial Aerodynamics	PE	3	3	0	0	3

SEMESTER VIII, ELECTIVES – V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	PR8491	Computer Integrated Manufacturing	PE	3	3	0	0	3
2.	AE8016	Flight Instrumentation	PE	3	3	0	0	3
3.	AE8017	Theory of Elasticity	PE	3	3	0	0	3
4.	AE8018	Air Traffic Control and Planning	PE	3	3	0	0	3
5.	MG8591	Principles of Management	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	HS8581	Professional Communication	EEC	2	0	0	2	1
3.	AE8613	Aircraft Design Project - I	EEC	2	0	0	2	1
4.	AE8713	Aircraft Design Project - II	EEC	2	0	0	2	1
5.	AE8811	Project Work	EEC	20	0	0	20	10

SUMMARY

B.E. AERONAUTICAL ENGINEERING											
SL. NO.	Subject Area	Credits per semester								Credits Total	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1	Humanities Sciences	4	7	0	0	0	0	3	0	14	**7.57**
2	Basic Sciences	12	7	4	4	0	0	0	0	27	**14.59**
3	Engineering Sciences	9	11	9	0	0	0	0	0	29	**15.14**
4	Professional Core	0	0	11	20	20	19	10	0	80	**43.24**
5	Professional Elective	0	0	0	0	0	3	6	6	15	**8.11**
6	Open Elective	0	0	0	0	3	0	3	0	6	**3.24**
7	Employability Enhancement Courses	-	-	1	0	1	1	1	10	14	**8.11**
	Total	**25**	**25**	**25**	**24**	**24**	**23**	**23**	**16**	**185**	
8	**Non Credit/Mandatory**										

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REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
OPEN ELECTIVES (Offered by Other Branches)

V SEMESTER

OPEN ELECTIVE - I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OAT551	Automotive Systems	OE	3	3	0	0	3
3.	OBM551	Bio Chemistry	OE	3	3	0	0	3
4.	OIC551	Biomedical Instrumentation	OE	3	3	0	0	3
5.	OIT552	Cloud Computing	OE	3	3	0	0	3
6.	OIT551	Database Management Systems	OE	3	3	0	0	3
7.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
8.	OAI551	Environment and Agriculture	OE	3	3	0	0	3
9.	OPT551	Fibre Reinforced Plastics	OE	3	3	0	0	3
10.	OCE552	Geographic Information System	OE	3	3	0	0	3
11.	OME553	Industrial Safety Engineering	OE	3	3	0	0	3
12.	OAT552	Internal Combustion Engines	OE	3	3	0	0	3
13.	OML551	Introduction To Nanotechnology	OE	3	3	0	0	3
14.	OIM552	Lean Manufacturing	OE	3	3	0	0	3
15.	OBM552	Medical Physics	OE	3	3	0	0	3
16.	OML552	Microscopy	OE	3	3	0	0	3
17.	OAI552	Participatory Water Resources Management	OE	3	3	0	0	3
18.	OCH552	Principles of Chemical Engineering	OE	3	3	0	0	3
19.	OBT554	Principles of Food Preservation	OE	3	3	0	0	3
20.	OMF551	Product Design and Development	OE	3	3	0	0	3
21.	OAI553	Production Technology of Agricultural Machinery	OE	3	3	0	0	3
22.	ORO551	Renewable Energy Sources	OE	3	3	0	0	3
23.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
24.	OIC552	State Variable Analysis And Design	OE	3	3	0	0	3
25.	OTL553	Telecommunication Network Management	OE	3	3	0	0	3
26.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

VII SEMESTER

OPEN ELECTIVE - II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OEE751	Basic Circuit Theory	OE	3	3	0	0	3
3.	OGI751	Climate Change and its Impact	OE	3	3	0	0	3
4.	OCS751	Data Structures and Algorithms	OE	3	3	0	0	3
5.	OML752	Electronic Materials	OE	3	3	0	0	3
6.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
7.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
8.	OEN751	Green Building Design	OE	3	3	0	0	3
9.	OAI752	Integrated Water Resources Management	OE	3	3	0	0	3
10.	OEI 751	Introduction to Embedded Systems	OE	3	3	0	0	3
11.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
12.	OAN751	Low Cost Automation	OE	3	3	0	0	3
13.	OMT751	MEMS and NEMS	OE	3	3	0	0	3
14.	ORO751	Nano Computing	OE	3	3	0	0	3
15.	OEC755	Photonic Networks	OE	3	3	0	0	3
16.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
17.	OAT751	Production of Automotive Components	OE	3	3	0	0	3
18.	OIE751	Robotics	OE	3	3	0	0	3
19.	OML753	Selection of Materials	OE	3	3	0	0	3
20.	OME753	Systems Engineering	OE	3	3	0	0	3
21.	OML751	Testing of Materials	OE	3	3	0	0	3
22.	OAT752	Vehicle Styling and Design	OE	3	3	0	0	3
23.	OTT751	Weaving Mechanisms	OE	3	3	0	0	3
24.	OPR751	Basics in Manufacturing and Metal Cutting Process	OE	3	3	0	0	3
25.	OPR752	Processing of Polymer and Composites	OE	3	3	0	0	3
26.	OMV751	Marine Vehicles	OE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI
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B.E. CIVIL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

I. To prepare students for successful careers in Civil Engineering field that meets the needs of Indian and multinational companies.

II. To develop the confidence and ability among students to synthesize data and technical concepts and thereby apply it in real world problems.

III. To develop students to use modern techniques, skill and mathematical engineering tools for solving problems in Civil Engineering.

IV. To provide students with a sound foundation in mathematical, scientific and engineering fundamentals necessary to formulate, solve and analyse engineering problems and to prepare them for graduate studies.

V. To promote students to work collaboratively on multi-disciplinary projects and make them engage in life-long learning process throughout their professional life.

PROGRAMME OUTCOMES (POs):
On successful completion of the programme,

1. Graduates will demonstrate knowledge of mathematics, science and engineering.
2. Graduates will demonstrate an ability to identify, formulate and solve engineering problems.
3. Graduate will demonstrate an ability to design and conduct experiments, analyze and interpret data.
4. Graduates will demonstrate an ability to design a system, component or process as per needs and specifications.
5. Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.
6. Graduate will demonstrate skills to use modern engineering tools, software and equipment to analyze problems.
7. Graduates will demonstrate knowledge of professional and ethical responsibilities.
8. Graduate will be able to communicate effectively in both verbal and written form.
9. Graduate will show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.
10. Graduate will develop confidence for self education and ability for life-long learning.

PEOs & POs

The B.E. Civil Engineering Program outcomes leading to the achievement of the objectives are summarized in the following Table.

Programme Educational Objectives	Programme Outcomes									
	a	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**
I	X	X		X	X					
II		X	X							
III				X			X			
IV	X				X					
V						X		X	X	X

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
YEAR 1	SEM 1	Communicative English				✓				✓		
		Engineering Mathematics – I	✓									
		Engineering Physics	✓	✓	✓	✓	✓	✓				
		Engineering Chemistry	✓	✓	✓		✓	✓	✓			
		Problem Solving and Python Programming	✓	✓			✓	✓	✓			
		Engineering Graphics	✓	✓	✓		✓	✓	✓		✓	✓
		Problem Solving and Python Programming Laboratory	✓	✓			✓	✓	✓			
		Physics and Chemistry Laboratory	✓	✓			✓	✓	✓			
	SEM 2	Technical English				✓				✓		
		Engineering Mathematics – II	✓									
		Physics for Civil Engineering	✓	✓	✓	✓	✓	✓				
		Basic Electrical and Electronics Engineering										
		Environmental Science and Engineering							✓		✓	
		Engineering Mechanics	✓	✓	✓		✓	✓	✓		✓	✓
		Engineering Practices Laboratory	✓	✓				✓	✓			
		Computer Aided Building Drawing										
			PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
YEAR 2	SEM 3	Transforms and Partial Differential Equations										
		Engineering Geology		✓	✓		✓		✓			✓
		Construction Materials		✓	✓		✓		✓			✓
		Strength of Materials I	✓	✓	✓	✓	✓					✓
		Fluid Mechanics	✓	✓		✓			✓	✓	✓	✓
		Surveying		✓	✓		✓		✓			✓
		Surveying Laboratory										
		Construction Materials Laboratory										

		Interpersonal Skills / Listening and Speaking										
	SEM 4	Numerical Methods										
		Construction Techniques and Practices		✓			✓		✓		✓	✓
		Strength of Materials II	✓	✓	✓	✓	✓					✓
		Applied Hydraulic Engineering	✓	✓		✓			✓	✓	✓	✓
		Concrete Technology	✓	✓		✓			✓	✓	✓	✓
		Soil Mechanics	✓	✓					✓	✓	✓	✓
		Strength of Materials Laboratory	✓	✓	✓	✓	✓					✓
		Hydraulic Engineering Laboratory	✓		✓		✓	✓	✓	✓	✓	✓
		Advanced Reading and Writing										
			PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
YEAR 3	**SEM 5**	Design of Reinforced Cement Concrete Elements	✓	✓	✓	✓	✓					✓
		Foundation Engineering		✓		✓			✓		✓	✓
		Structural Analysis I	✓	✓	✓	✓	✓				✓	✓
		Water Supply Engineering			✓	✓	✓	✓			✓	
		Open Elective- I*										
		Professional Elective I										
		Water and Waste Water Analysis Laboratory		✓		✓			✓			✓
		Soil Mechanics Laboratory			✓		✓	✓				
		Survey Camp (2 weeks–During V Semester)			✓	✓					✓	
	SEM 6	Design of Steel Structural Elements	✓	✓	✓	✓	✓					✓
		Structural Analysis II	✓	✓	✓	✓	✓				✓	✓
		Irrigation Engineering	✓	✓		✓						
		Wastewater Engineering	✓	✓		✓						

		Highway Engineering		✓	✓	✓	✓			✓		
		Professional Elective II										
		Highway Engineering Laboratory								✓		
		Irrigation and Environmental Engineering Drawing										
		Professional Communication										
			PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
YEAR 4	**SEM 7**	Estimation, Costing and Valuation Engineering	✓	✓				✓	✓			✓
		Railways, Airports, Docks and Harbour Engineering		✓		✓			✓		✓	✓
		Structural Design and Drawing	✓	✓	✓	✓		✓				✓
		Professional Elective III										
		Open Elective II*										
		Creative and Innovative Project (Activity Based - Subject Related)		✓		✓			✓			✓
		Industrial Training (4 weeks During VI semester–Summer)				✓			✓	✓		✓
	SEM 8	Professional Elective IV										
		Professional Elective V										
		Project Work		✓		✓			✓			✓

ANNA UNIVERSITY, CHENNAI
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B.E. CIVIL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics – I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics – II	BS	4	4	0	0	4
3.	PH8201	Physics For Civil Engineering	BS	3	3	0	0	3
4.	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CE8211	Computer Aided Building Drawing	PC	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	CE8301	Strength of Materials I	PC	3	3	0	0	3
3.	CE8302	Fluid Mechanics	PC	3	3	0	0	3
4.	CE8351	Surveying	PC	3	3	0	0	3
5.	CE8391	Construction Materials	PC	3	3	0	0	3
6.	CE8392	Engineering Geology	ES	3	3	0	0	3
PRACTICALS								
7.	CE8311	Construction Materials Laboratory	PC	4	0	0	4	2
8.	CE8361	Surveying Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	CE8401	Construction Techniques and Practices	PC	3	3	0	0	3
3.	CE8402	Strength of Materials II	PC	3	3	0	0	3
4.	CE8403	Applied Hydraulic Engineering	PC	3	3	0	0	3
5.	CE8404	Concrete Technology	PC	3	3	0	0	3
6.	CE8491	Soil Mechanics	PC	3	3	0	0	3
PRACTICALS								
7.	CE8481	Strength of Materials Laboratory	PC	4	0	0	4	2
8.	CE8461	Hydraulic Engineering Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8501	Design of Reinforced Cement Concrete Elements	PC	5	3	2	0	4
2.	CE8502	Structural Analysis I	PC	3	3	0	0	3
3.	EN8491	Water Supply Engineering	PC	3	3	0	0	3
4.	CE8591	Foundation Engineering	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	CE8511	Soil Mechanics Laboratory	PC	4	0	0	4	2
8.	CE8512	Water and Waste Water Analysis Laboratory	PC	4	0	0	4	2
9.	CE8513	Survey Camp (2 weeks –During IV Semester)	EEC	0	0	0	0	2
			TOTAL	**28**	**18**	**2**	**8**	**25**

SEMESTER VI

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8601	Design of Steel Structural Elements	PC	5	3	2	0	4
2.	CE8602	Structural Analysis II	PC	3	3	0	0	3
3.	CE8603	Irrigation Engineering	PC	3	3	0	0	3
4.	CE8604	Highway Engineering	PC	3	3	0	0	3
5.	EN8592	Wastewater Engineering	PC	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
7.	CE8611	Highway Engineering Laboratory	PC	4	0	0	4	2
8.	CE8612	Irrigation and Environmental Engineering Drawing	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**2**	**10**	**24**

SEMESTER VII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CE8701	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3
2.	CE8702	Railways, Airports, Docks and Harbour Engineering	PC	3	3	0	0	3
3.	CE8703	Structural Design and Drawing	PC	5	3	0	2	4
4.		Professional Elective III	PE	3	3	0	0	3
5.		Open Elective II*	OE	3	3	0	0	3
PRACTICALS								
6.	CE8711	Creative and Innovative Project (Activity Based - Subject Related)	EEC	4	0	0	4	2
7.	CE8712	Industrial Training (4 weeks During VI Semester – Summer)	EEC	0	0	0	0	2
			TOTAL	**21**	**15**	**0**	**6**	**20**

SEMESTER VIII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	CE8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 183

*Course from the curriculum of other UG Programmes.

HUMANITIES AND SOCIAL SCIENCES (HS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

BASIC SCIENCES (BS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics – I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics – II	BS	4	4	0	0	4
6.	PH8201	Physics for Civil Engineering	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	CE8392	Engineering Geology	ES	3	3	0	0	3

PROFESSIONAL CORE (PC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8211	Computer Aided Building Drawing	PC	4	0	0	4	2
2.	CE8391	Construction Materials	PC	3	3	0	0	3
3.	CE8301	Strength of Materials I	PC	3	3	0	0	3
4.	CE8302	Fluid Mechanics	PC	3	3	0	0	3
5.	CE8351	Surveying	PC	3	3	0	0	3

6.	CE8481	Strength of Materials Laboratory	PC	4	0	0	4	2
7.	CE8361	Surveying Laboratory	PC	4	0	0	4	2
8.	CE8311	Construction Materials Laboratory	PC	4	0	0	4	2
9.	CE8401	Construction Techniques and Practices	PC	3	3	0	0	3
10.	CE8402	Strength of Materials II	PC	3	3	0	0	3
11.	CE8403	Applied Hydraulic Engineering	PC	3	3	0	0	3
12.	CE8404	Concrete Technology	PC	3	3	0	0	3
13.	CE8491	Soil Mechanics	PC	3	3	0	0	3
14.	CE8461	Hydraulic Engineering Laboratory	PC	4	0	0	4	2
15.	CE8501	Design of Reinforced Cement Concrete Elements	PC	5	3	2	0	4
16.	CE8502	Structural Analysis I	PC	3	3	0	0	3
17.	CE8511	Soil Mechanics Laboratory	PC	4	0	0	4	2
18.	CE8512	Water and Waste Water Analysis Laboratory	PC	4	0	0	4	2
19.	CE8591	Foundation Engineering	PC	3	3	0	0	3
20.	CE8601	Design of Steel Structural Elements	PC	5	3	2	0	4
21.	CE8602	Structural Analysis II	PC	3	3	0	0	3
22.	CE8603	Irrigation Engineering	PC	3	3	0	0	3
23.	CE8604	Highway Engineering	PC	3	3	0	0	3
24.	CE8611	Highway Engineering Laboratory	PC	4	0	0	4	2
25.	CE8612	Irrigation and Environmental Engineering Drawing	PC	4	0	0	4	2
26.	EN8592	Wastewater Engineering	PC	3	3	0	0	3
27.	EN8491	Water Supply Engineering	PC	3	3	0	0	3
28.	CE8701	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3
29.	CE8702	Railways, Airports, Docks and Harbour Engineering	PC	3	3	0	0	3
30.	CE8703	Structural Design and Drawing	PC	5	3	0	2	4

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	CE8513	Survey Camp (2 weeks – During IV Semester)	EEC	0	0	0	0	2
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	CE8711	Creative and Innovative Project (Activity Based - Subject Related)	EEC	4	0	0	4	2
6.	CE8712	Industrial Training (4 weeks During VI Semester – Summer)	EEC	0	0	0	0	2
7.	CE8811	Project Work	EEC	20	0	0	20	10

PROFESSIONAL ELECTIVE

SEMESTER V
ELECTIVE - I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GI8012	Digital Cadastre	PE	3	3	0	0	3
2.	GI8013	Advanced Surveying	PE	3	3	0	0	3
3.	GI8014	Geographic Information System	PE	3	3	0	0	3
4.	GI8015	Geoinformatics Applications for Civil Engineers	PE	3	3	0	0	3
5.	GI8491	Total Station and GPS Surveying	PE	3	3	0	0	3
6.	GE8071	Disaster Management	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3

SEMESTER VI
ELECTIVE - II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8001	Ground Improvement Techniques	PE	3	3	0	0	3
2.	CE8002	Introduction to Soil Dynamics and Machine Foundations	PE	3	3	0	0	3
3.	CE8003	Rock Engineering	PE	3	3	0	0	3
4.	CE8004	Urban Planning and Development	PE	3	3	0	0	3
5.	CE8005	Air Pollution and Control Engineering	PE	3	3	0	0	3
6.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE – III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8006	Pavement Engineering	PE	3	3	0	0	3
2.	CE8007	Traffic Engineering and Management	PE	3	3	0	0	3
3.	CE8008	Transport and Environment	PE	3	3	0	0	3
4.	CE8009	Industrial Structures	PE	3	3	0	0	3
5.	CE8010	Environmental and Social Impact Assessment	PE	3	3	0	0	3
6.	CE8011	Design of Prestressed Concrete Structures	PE	3	3	0	0	3
7.	CE8012	Construction Planning and Scheduling	PE	3	3	0	0	3
8.	EN8591	Municipal Solid Waste Management	PE	3	3	0	0	3
9.	GE8077	Total Quality Management	PE	3	3	0	0	3
10.	GE8072	Foundation Skills In Integrated Product Development	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE – IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8013	Coastal Engineering	PE	3	3	0	0	3
2.	CE8014	Participatory Water Resources Management	PE	3	3	0	0	3
3.	CE8015	Integrated Water Resources Management	PE	3	3	0	0	3
4.	CE8016	Groundwater Engineering	PE	3	3	0	0	3
5.	CE8017	Water Resources Systems Engineering	PE	3	3	0	0	3
6.	CE8018	Geo-Environmental Engineering	PE	3	3	0	0	3
7.	CE8091	Hydrology and Water Resources Engineering	PE	3	3	0	0	3
8.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE – V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CE8019	Computer Aided Design of Structures	PE	3	3	0	0	3
2.	CE8020	Maintenance, Repair and Rehabilitation of Structures	PE	3	3	0	0	3
3.	CE8021	Structural Dynamics and Earthquake Engineering	PE	3	3	0	0	3
4.	CE8022	Prefabricated Structures	PE	3	3	0	0	3
5.	CE8023	Bridge Engineering	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

SUMMARY

S.No	Subject Area	Credits per Semester								Credits Total
		I	II	III	IV	V	VI	VII	VIII	
1	**HS**	4	7							**11**
2	**BS**	12	7	4	4					**27**
3	**ES**	9	9	3						**21**
4	**PC**		2	16	19	17	20	10		**84**
5	**PE**					3	3	3	6	**15**
6	**OE**					3		3		**6**
7	**EEC**			1	1	2	1	4	10	**19**
	Total	**25**	**25**	**24**	**24**	**25**	**24**	**20**	**16**	**183**
8	**Non-Credit/Mandatory**									

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OPEN ELECTIVES (Offered By Other Branches)

SEMESTER V
OPEN ELECTIVE - I

Sl. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
2.	OAI551	Environment and Agriculture	OE	3	3	0	0	3
3.	OCH551	Industrial Nanotechnology	OE	3	3	0	0	3
4.	OAI553	Production Technology of Agricultural machinery	OE	3	3	0	0	3
5.	ORO551	Renewable Energy Sources	OE	3	3	0	0	3
6.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
7.	OCS551	Software Engineering	OE	3	3	0	0	3
8.	OME552	Vibration and Noise Control	OE	3	3	0	0	3

SEMESTER VII
OPEN ELECTIVE - II

Sl. No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OGI751	Climate Change and Its Impact	OE	3	3	0	0	3
3.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
4.	OEN751	Green Building Design	OE	3	3	0	0	3
5.	OME754	Industrial Safety	OE	3	3	0	0	3
6.	OCS752	Introduction to C Programming	OE	3	3	0	0	3
7.	OIE751	Robotics	OE	3	3	0	0	3
8.	OML753	Selection of Materials	OE	3	3	0	0	3
9.	OML751	Testing of Materials	OE	3	3	0	0	3
10.	OTT752	Textile effluent treatments	OE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI
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M. E. STRUCTURAL ENGINEERING

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

I. To prepare students to excel in research and to succeed in Structural engineering profession through global, rigorous post graduate education

II. To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve structural engineering problems

III. To train students with good scientific and engineering knowledge so as to comprehend, analyze, design, and create novel products and solutions for the real life problems

IV. To inculcate students in professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, and an ability to relate structural engineering issues to broader social context.

V. To provide student with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career

PROGRAMME OUTCOMES (POs):

On successful completion of the programme,

1. Graduates will demonstrate knowledge of mathematics, science and engineering.
2. Graduates will demonstrate an ability to identify, formulate and solve engineering problems.
3. Graduate will demonstrate an ability to design and conduct experiments, analyze and interpret data.
4. Graduates will demonstrate an ability to design a system, component or process as per needs and specifications.
5. Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.
6. Graduate will demonstrate skills to use modern engineering tools, software and equipment to analyze problems.
7. Graduates will demonstrate knowledge of professional and ethical responsibilities.
8. Graduate will be able to communicate effectively in both verbal and written form.
9. Graduate will show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.
10. Graduate will develop confidence for self education and ability for life-long learning.

Programme Educational Objectives	Programme Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
I	✓	✓		✓						
II					✓	✓	✓			
III				✓	✓	✓	✓			
IV							✓	✓	✓	
V		✓	✓						✓	✓

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
YEAR 1	SEM 1	Advanced Mathematical Methods	✓									
		Advanced Concrete Structures				✓	✓					
		Dynamics of Structures	✓	✓	✓		✓					
		Theory of Elasticity and Plasticity	✓	✓								
		Professional Elective I										
		Professional Elective II										
	SEM 2	Advanced Steel Structures		✓		✓					✓	
		Stability of Structures		✓		✓					✓	
		Earthquake Analysis and Design of Structures		✓	✓							
		Experimental Techniques		✓	✓	✓		✓			✓	
		Finite Element Analysis of Structures	✓					✓			✓	
		Professional Elective III										
		Professional Elective IV										
		Advanced Structural Engineering Laboratory		✓		✓	✓	✓				
		Practical Training I (2 weeks)				✓			✓	✓		✓
YEAR 2	SEM 1	Earthquake Analysis and Design of Structures										
		Professional Elective V										
		Professional Elective VI										
		Practical Training II (2 weeks)				✓			✓	✓		✓
		Seminar								✓		
		Project Work (Phase I)		✓		✓			✓			✓
	SEM 2	Project Work (Phase II)		✓		✓			✓			✓
		Practical Training III (2 weeks)				✓			✓	✓		✓

Professional Electives (PE)

Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Maintenance and Rehabilitation of Structures					✓	✓			✓	
Prefabricated Structures		✓	✓	✓					✓	✓
Offshore Structures		✓							✓	
Analysis and Design of Tall Buildings	✓	✓		✓		✓			✓	✓
Theory of Plates	✓			✓						
Matrix Methods for Structural Analysis	✓					✓				
Mechanics of Composite Materials		✓		✓	✓					
Industrial Structures		✓		✓						
Pre-stressed Concrete		✓		✓		✓			✓	✓
Wind and Cyclone Effects on Structures		✓		✓		✓			✓	✓
Nonlinear Analysis Structures			✓							
Design of Sub Structures	✓	✓		✓		✓			✓	✓
Optimization of Structures	✓					✓				
Design of Steel Concrete Composite Structures		✓		✓						
Design of Bridges		✓		✓		✓				
Design of Shell and Spatial Structures				✓		✓				
Computer Aided Analysis and Design	✓	✓	✓	✓	✓	✓				

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CHOICE BASED CREDIT SYSTEM
CURRICULA AND SYLLABI

SEMESTER I

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5151	Advanced Mathematical Methods	FC	4	4	0	0	4
2.	ST5101	Advanced Concrete Structures	PC	3	3	0	0	3
3.	ST5102	Dynamics of Structures	PC	3	3	0	0	3
4.	ST5103	Theory of Elasticity and Plasticity	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
			TOTAL	**19**	**19**	**0**	**0**	**19**

SEMESTER II

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5201	Advanced Steel Structures	PC	3	3	0	0	3
2.	ST5202	Stability of Structures	PC	3	3	0	0	3
3.	ST5203	Experimental Techniques	PC	3	3	0	0	3
4.	ST5204	Finite Element Analysis of Structures	PC	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
PRACTICAL								
7.	ST5211	Advanced Structural Engineering Laboratory	PC	4	0	0	4	2
8.	ST5212	Practical Training I (2 weeks)	EEC	0	0	0	0	1
			TOTAL	**22**	**18**	**0**	**4**	**21**

SEMESTER III

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ST5301	Earthquake Analysis and Design of Structures	PC	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
3.		Professional Elective VI	PE	3	3	0	0	3
PRACTICAL								
4.	ST5311	Practical Training II (2 weeks)	EEC	0	0	0	0	1
5.	ST5312	Seminar	EEC	2	0	0	2	1
6.	ST5313	Project Work (Phase I)	EEC	12	0	0	12	6
			TOTAL	**23**	**9**	**0**	**14**	**17**

SEMESTER IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICAL								
1.	ST5411	Practical Training III (2 weeks)	EEC	0	0	0	0	1
2.	ST5412	Project Work (Phase II)	EEC	24	0	0	24	12
			TOTAL	**24**	**0**	**0**	**24**	**13**

TOTAL NO. OF CREDITS: 70

FOUNDATION COURSES (FC)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5151	Advanced Mathematical Methods	FC	4	4	0	0	4

PROFESSIONAL CORE (PC)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5101	Advanced Concrete Structures	PC	3	3	0	0	3
2.	ST5102	Dynamics of Structures	PC	3	3	0	0	3
3.	ST5103	Theory of Elasticity and Plasticity	PC	3	3	0	0	3
4.	ST5201	Advanced Steel Structures	PC	3	3	0	0	3
5.	ST5202	Stability of Structures	PC	3	3	0	0	3
6.	ST5203	Experimental Techniques	PC	3	3	0	0	3
7.	ST5204	Finite Element Analysis of Structures	PC	3	3	0	0	3
8.	ST5211	Advanced Structural Engineering Laboratory	PC	4	0	0	4	2
9.	ST5301	Earthquake Analysis and Design of Structures	PC	3	3	0	0	3

PROFESSIONAL ELECTIVES

SEMESTER I

ELECTIVE I & II

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5001	Maintenance and Rehabilitation of Structures	PE	3	3	0	0	3
2.	ST5002	Prefabricated Structures	PE	3	3	0	0	3
3.	ST5003	Offshore Structures	PE	3	3	0	0	3
4.	ST5004	Matrix Methods for Structural Analysis	PE	3	3	0	0	3

SEMESTER II

ELECTIVE III & IV

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5005	Theory of Plates	PE	3	3	0	0	3
2.	ST5006	Mechanics of Composite Materials	PE	3	3	0	0	3
3.	ST5007	Analysis and Design of Tall Buildings	PE	3	3	0	0	3
4.	ST5008	Industrial Structures	PE	3	3	0	0	3
5.	ST5009	Prestressed Concrete	PE	3	3	0	0	3
6.	ST5010	Wind and Cyclone Effects on Structures	PE	3	3	0	0	3

SEMESTER III

ELECTIVE V & VI

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5011	Nonlinear Analysis of Structures	PE	3	3	0	0	3
2.	ST5012	Design of Sub Structures	PE	3	3	0	0	3
3.	ST5013	Optimization of Structures	PE	3	3	0	0	3
4.	ST5014	Design of Steel Concrete Composite Structures	PE	3	3	0	0	3
5.	ST5015	Design of Bridges	PE	3	3	0	0	3
6.	ST5016	Design of Shell and Spatial Structures	PE	3	3	0	0	3
7.	ST5017	Computer Aided Analysis and Design	PE	4	2	0	2	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ST5212	Practical Training I (2 weeks)	EEC	-	-	-	-	1
2.	ST5311	Practical Training II (2 weeks)	EEC	-	-	-	-	1
3.	ST5411	Practical Training III (2 weeks)	EEC	-	-	-	-	1
4.	ST5312	Seminar	EEC	2	0	0	2	1
5.	ST5313	Project Work (Phase I)	EEC	12	0	0	12	6
6.	ST5412	Project Work (Phase II)	EEC	24	0	0	24	12

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CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**20**	**0**	**8**	**24**

SEMESTER III

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8395	Communication Engineering	ES	3	3	0	0	3
PRACTICALS								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
			TOTAL	**31**	**17**	**0**	**14**	**24**

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8402	Probability and Queueing Theory	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	CS8494	Software Engineering	PC	3	3	0	0	3
PRACTICALS								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	CS8501	Theory of Computation	PC	3	3	0	0	3
5.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	CS8581	Networks Laboratory	PC	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CS8651	Internet Programming	PC	3	3	0	0	3
2.	CS8691	Artificial Intelligence	PC	3	3	0	0	3
3.	CS8601	Mobile Computing	PC	3	3	0	0	3
4.	CS8602	Compiler Design	PC	5	3	0	2	4
5.	CS8603	Distributed Systems	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
PRACTICALS								
7.	CS8661	Internet Programming Laboratory	PC	4	0	0	4	2
8.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
9.	CS8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**32**	**18**	**0**	**14**	**25**

SEMESTER VII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	CS8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 185

HUMANITIES AND SOCIAL SCIENCES (HS)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

BASIC SCIENCES (BS)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8252	Physics for Information Science	BS	3	3	0	0	3
7.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
8.	MA8402	Probability and Queueing Theory	BS	4	4	0	0	4
9.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
7.	EC8395	Communication Engineering	ES	3	3	0	0	3
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8251	Programming in C	PC	3	3	0	0	3
2.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
6.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
7.	CS8491	Computer Architecture	PC	3	3	0	0	3
8.	CS8492	Database Management Systems	PC	3	3	0	0	3
9.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
10.	CS8493	Operating Systems	PC	3	3	0	0	3
11.	CS8494	Software Engineering	PC	3	3	0	0	3
12.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
13.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
14.	CS8591	Computer Networks	PC	3	3	0	0	3
15.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
16.	CS8501	Theory of Computation	PC	3	3	0	0	3
17.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
18.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
19.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
20.	CS8581	Networks Laboratory	PC	4	0	0	4	2
21.	CS8651	Internet Programming	PC	3	3	0	0	3
22.	CS8691	Artificial Intelligence	PC	3	3	0	0	3
23.	CS8601	Mobile Computing	PC	3	3	0	0	3
24.	CS8602	Compiler Design	PC	5	3	0	2	4
25.	CS8603	Distributed Systems	PC	3	3	0	0	3
26.	CS8661	Internet Programming Laboratory	PC	4	0	0	4	2
27.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
28.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
29.	CS8791	Cloud Computing	PC	3	3	0	0	3
30.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
31.	IT8761	Security Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES (PE)

SEMESTER VI
ELECTIVE - I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8075	Data Warehousing and Data Mining	PE	3	3	0	0	3
2.	IT8076	Software Testing	PE	3	3	0	0	3
3.	IT8072	Embedded Systems	PE	3	3	0	0	3
4.	CS8072	Agile Methodologies	PE	3	3	0	0	3
5.	CS8077	Graph Theory and Applications-	PE	3	3	0	0	3
6.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8091	Big Data Analytics	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	CS8092	Computer Graphics and Multimedia	PE	3	3	0	0	3
4.	IT8075	Software Project Management	PE	3	3	0	0	3
5.	CS8081	Internet of Things	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8083	Multi-core Architectures and Programming	PE	3	3	0	0	3
2.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
3.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
4.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8093	Digital Image Processing	PE	3	3	0	0	3
2.	CS8085	Social Network Analysis	PE	3	3	0	0	3
3.	IT8073	Information Security	PE	3	3	0	0	3
4.	CS8087	Software Defined Networks	PE	3	3	0	0	3
5.	CS8074	Cyber Forensics	PE	3	3	0	0	3
6.	CS8086	Soft Computing	PE	3	3	0	0	3
7.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8080	Information Retrieval Techniques	PE	3	3	0	0	3
2.	CS8078	Green Computing	PE	3	3	0	0	3
3.	CS8076	GPU Architecture and Programming	PE	3	3	0	0	3
4.	CS8084	Natural Language Processing	PE	3	3	0	0	3
5.	CS8001	Parallel Algorithms	PE	3	3	0	0	3
6.	IT8077	Speech Processing	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	CS8611	Mini Project	EEC	2	0	0	2	1
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	CS8811	Project Work	EEC	20	0	0	20	10

SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	7					3		14	7.60%
2.	BS	12	7	4	4	4				31	16.8%
3.	ES	9	5	9						23	12.5%
4.	PC		5	10	19	18	20	10		82	44.5%
5.	PE						3	6	6	15	8.15%
6.	OE					3		3		6	3.3%
7.	EEC			1	1		2		10	14	7.65%
	Total	25	24	24	24	25	25	22	16	185	
8.	Non Credit / Mandatory										

SEMESTER V

OPEN ELECTIVE - I

SL NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OMD551	Basic of Biomedical Instrumentation	OE	3	3	0	0	3
3.	OBT552	Basics of Bioinformatics	OE	3	3	0	0	3
4.	OBM551	Bio Chemistry	OE	3	3	0	0	3
5.	OTL552	Digital Audio Engineering	OE	3	3	0	0	3
6.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
7.	OBT553	Fundamentals of Nutrition	OE	3	3	0	0	3
8.	OCE552	Geographic Information System	OE	3	3	0	0	3
9.	OPY551	Herbal Technology	OE	3	3	0	0	3
10.	OMD552	Hospital Waste Management	OE	3	3	0	0	3
11.	OCH551	Industrial Nanotechnology	OE	3	3	0	0	3
12.	OBT551	Introduction to Bioenergy and Biofuels	OE	3	3	0	0	3
13.	OME553	Industrial Safety Engineering	OE	3	3	0	0	3
14.	OEI551	Logic and Distributed Control Systems	OE	3	3	0	0	3
15.	OBM552	Medical Physics	OE	3	3	0	0	3
16.	OML552	Microscopy	OE	3	3	0	0	3
17.	OBT554	Principles of Food Preservation	OE	3	3	0	0	3
18.	OMF551	Product Design and Development	OE	3	3	0	0	3
19.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
20.	OTL551	Space Time Wireless Communication	OE	3	3	0	0	3
21.	OEC552	Soft Computing	OE	3	3	0	0	3
22.	OTL553	Telecommunication Network Management	OE	3	3	0	0	3
23.	OMD553	Telehealth Technology	OE	3	3	0	0	3
24.	OTL554	Wavelets and its Applications	OE	3	3	0	0	3
25.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

SEMESTER VII

OPEN ELECTIVE - II

SL NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OEE751	Basic Circuit Theory	OE	3	3	0	0	3
3.	OBM751	Basics of Human Anatomy and Physiology	OE	3	3	0	0	3
4.	OGI751	Climate Change and its Impact	OE	3	3	0	0	3
5.	OPY751	Clinical Trials	OE	3	3	0	0	3
6.	OEC751	Electronic Devices	OE	3	3	0	0	3
7.	OML752	Electronic Materials	OE	3	3	0	0	3
8.	OCH752	Energy Technology	OE	3	3	0	0	3
9.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
10.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
11.	OEN751	Green Building Design	OE	3	3	0	0	3
12.	OBM752	Hospital Management	OE	3	3	0	0	3
13.	OEE752	Introduction to Renewable Energy Systems	OE	3	3	0	0	3
14.	OBT753	Introduction of Cell Biology	OE	3	3	0	0	3
15.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
16.	OAN751	Low Cost Automation	OE	3	3	0	0	3
17.	OEC754	Medical Electronics	OE	3	3	0	0	3
18.	OEC756	MEMS and NEMS	OE	3	3	0	0	3
19.	OBT752	Microbiology	OE	3	3	0	0	3
20.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
21.	OIE751	Robotics	OE	3	3	0	0	3
22.	OEC753	Signals and Systems	OE	4	4	0	0	4
23.	OME752	Supply Chain Management	OE	3	3	0	0	3
24.	OME753	Systems Engineering	OE	3	3	0	0	3
25.	OTL751	Telecommunication System Modeling and Simulation	OE	3	3	0	0	3
26.	OCY751	Waste Water Treatment	OE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
M.E. COMPUTER SCIENCE AND ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4
2.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
3.	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
4.	CP5153	Operating System Internals	PC	3	3	0	0	3
5.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
6.	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
PRACTICALS								
7.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
			TOTAL	**24**	**20**	**0**	**4**	**22**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	CP5201	Network Design and Technologies	PC	3	3	0	0	3
2.	CP5291	Security Practices	PC	3	3	0	0	3
3.	CP5292	Internet of Things	PC	3	3	0	0	3
4.	CP5293	Big Data Analytics	PC	3	3	0	0	3
5.		Professional Elective –I	PE	3	3	0	0	3
6.		Professional Elective –II	PE	3	3	0	0	3
PRACTICALS								
7.	CP5261	Data Analytics Laboratory	PC	4	0	0	4	2
8.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
			TOTAL	**24**	**18**	**0**	**6**	**21**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective –III	PE	3	3	0	0	3
2.		Professional Elective –IV	PE	3	3	0	0	3
3.		Professional Elective –V	PE	3	3	0	0	3
PRACTICALS								
4.	CP5311	Project Work Phase – I	EEC	12	0	0	12	6
			TOTAL	**21**	**9**	**0**	**12**	**15**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICALS								
1.	CP5411	Project Work Phase – II	EEC	24	0	0	24	12
			TOTAL	**24**	**0**	**0**	**24**	**12**

TOTAL NO. OF CREDITS:70

FOUNDATION COURSES (FC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5160	Applied Probability and Statistics	FC	4	4	0	0	4

PROFESSIONAL CORE (PC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5151	Advanced Data Structures and Algorithms	PC	4	4	0	0	4
2.	CP5152	Advanced Computer Architecture	PC	3	3	0	0	3
3.	CP5153	Operating System Internals	PC	3	3	0	0	3
4.	CP5154	Advanced Software Engineering	PC	3	3	0	0	3
5.	CP5191	Machine Learning Techniques	PC	3	3	0	0	3
6.	CP5161	Data Structures Laboratory	PC	4	0	0	4	2
7.	CP5201	Network Design and Technologies	PC	3	3	0	0	3
8.	CP5291	Security Practices	PC	3	3	0	0	3
9.	CP5292	Internet of Things	PC	3	3	0	0	3
10.	CP5293	Big Data Analytics	PC	3	3	0	0	3
11.	CP5261	Data Analytics Laboratory	PC	4	0	0	4	2

EMPLOYABILITY ENHANCEMENT COURSE (EEC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5281	Term Paper and Seminar	EEC	2	0	0	2	1
2.	CP5311	Project Work Phase – I	EEC	12	0	0	12	6
3.	CP5411	Project Work Phase – II	EEC	24	0	0	24	12

LIST OF ELECTIVES
II SEMESTER
ELECTIVE I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IF5191	Advanced Databases	PE	3	3	0	0	3
2.	CP5001	Principles of Programming Languages	PE	3	3	0	0	3
3.	CP5071	Image Processing and Analysis	PE	3	3	0	0	3
4.	CP5091	Web Engineering	PE	3	3	0	0	3
5.	CP5092	Cloud Computing Technologies	PE	3	3	0	0	3

II SEMESTER
ELECTIVE II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MP5291	Real Time Systems	PE	3	3	0	0	3
2.	CP5093	Mobile and Pervasive Computing	PE	3	3	0	0	3
3.	CP5002	Parallel Programming Paradigms	PE	3	3	0	0	3
4.	CP5094	Information Retrieval Techniques	PE	3	3	0	0	3
5.	CP5072	Software Architectures and Design	PE	3	3	0	0	3

SEMESTER III
ELECTIVE III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5003	Performance Analysis of Computer Systems	PE	3	3	0	0	3
2.	CP5004	Language Technologies	PE	3	3	0	0	3
3.	CP5095	Computer Vision	PE	3	3	0	0	3
4.	CP5096	Speech Processing and Synthesis	PE	3	3	0	0	3
5.	CP5005	Software Quality Assurance and Testing	PE	3	3	0	0	3

SEMESTER III
ELECTIVE IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5006	Formal models of software systems	PE	3	3	0	0	3
2.	CP5073	Embedded Software Development	PE	3	3	0	0	3
3.	CP5074	Social Network Analysis	PE	3	3	0	0	3
4.	CP5007	Bio-inspired Computing	PE	3	3	0	0	3
5.	CP5008	Compiler Optimization Techniques	PE	3	3	0	0	3

SEMESTER III
ELECTIVE V

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5009	Data Visualization Techniques	PE	3	3	0	0	3
2.	CP5010	Reconfigurable Computing	PE	3	3	0	0	3
3.	CP5097	Mobile Application Development	PE	3	3	0	0	3
4.	CP5075	Bio Informatics	PE	3	3	0	0	3
5.	CP5076	Information Storage Management	PE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRICAL AND ELECTRONICS ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

Educational Objectives

Bachelor of Electrical and Electronics Engineering curriculum is designed to prepare the graduates having attitude and knowledge to

1. Have successful technical and professional careers in their chosen fields such as circuit theory, Field theory, control theory and computational platforms.
2. Engross in life long process of learning to keep themselves abreast of new developments in the field of Electronics and their applications in power engineering.

Programme Outcomes

The graduates will have the ability to

a. Apply the Mathematical knowledge and the basics of Science and Engineering to solve the problems pertaining to Electronics and Instrumentation Engineering.
b. Identify and formulate Electrical and Electronics Engineering problems from research literature and be ability to analyze the problem using first principles of Mathematics and Engineering Sciences.
c. Come out with solutions for the complex problems and to design system components or process that fulfill the particular needs taking into account public health and safety and the social, cultural and environmental issues.
d. Draw well-founded conclusions applying the knowledge acquired from research and research methods including design of experiments, analysis and interpretation of data and synthesis of information and to arrive at significant conclusion.
e. Form, select and apply relevant techniques, resources and Engineering and IT tools for Engineering activities like electronic prototyping, modeling and control of systems and also being conscious of the limitations.
f. Understand the role and responsibility of the Professional Electrical and Electronics Engineer and to assess societal, health, safety issues based on the reasoning received from the contextual knowledge.
g. Be aware of the impact of professional Engineering solutions in societal and environmental contexts and exhibit the knowledge and the need for Sustainable Development.
h. Apply the principles of Professional Ethics to adhere to the norms of the engineering practice and to discharge ethical responsibilities.
i. Function actively and efficiently as an individual or a member/leader of different teams and multidisciplinary projects.
j. Communicate efficiently the engineering facts with a wide range of engineering community and others, to understand and prepare reports and design documents; to make effective presentations and to frame and follow instructions.
k. Demonstrate the acquisition of the body of engineering knowledge and insight and Management Principles and to apply them as member / leader in teams and multidisciplinary environments.
l. Recognize the need for self and life-long learning, keeping pace with technological challenges in the broadest sense.

PEO \PO	a	b	c	d	e	f	g	h	i	j	k	l
1	✓	✓	✓	✓	✓	✓	✓					✓
2	✓	✓	✓	✓	✓	✓		✓		✓		

SEMESTER	NAME OF THE SUBJECT	PROGRAM OUTCOMES											
		a	b	c	d	e	f	g	h	i	j	k	l
	THEORY												
SEM I	Communicative English									✓	✓		✓
	Engineering Mathematics - I	✓	✓			✓							✓
	Engineering Physics	✓	✓	✓		✓		✓					✓
	Engineering Chemistry	✓	✓	✓		✓							✓
	Problem Solving and Python Programming	✓	✓	✓	✓	✓							✓
	Engineering Graphics			✓	✓								
	PRACTICAL												
	Problem Solving and Python Programming Laboratory	✓		✓	✓	✓	✓				✓		✓
	Physics and Chemistry Laboratory	✓	✓										
	THEORY												
SEM II	Technical English									✓	✓		✓
	Engineering Mathematics - II	✓	✓	✓		✓							✓
	Physics For Electronics Engineering	✓	✓	✓		✓		✓					✓
	Basic Civil and Mechanical Engineering				✓		✓						
	Circuit Theory	✓	✓	✓	✓	✓							✓
	Environmental Science and Engineering	✓	✓			✓	✓	✓	✓				✓
	PRACTICALS												
	Engineering Practices Laboratory	✓		✓	✓	✓	✓				✓		
	Electric Circuits Lab	✓		✓	✓	✓	✓				✓		✓
	THEORY												
SEM III	Transforms and Partial Differential Equations	✓	✓			✓							✓
	Digital Logic Circuits				✓	✓							
	Electromagnetic Theory	✓	✓	✓	✓	✓					✓		✓
	Electrical Machines – I	✓	✓	✓	✓	✓					✓		

	Electron Devices and Circuits	✓	✓	✓	✓	✓							✓
	Power Plant Engineering			✓	✓	✓		✓	✓	✓			
	PRACTICALS												
	Electronics Laboratory	✓			✓	✓						✓	✓
	Electrical Machines Laboratory - I	✓			✓	✓						✓	✓
	THEORY												
SEM IV	Numerical Methods	✓	✓	✓									✓
	Electrical Machines – II	✓	✓	✓	✓	✓		✓					✓
	Transmission and Distribution	✓	✓	✓	✓	✓		✓					✓
	Measurements and Instrumentation	✓	✓	✓	✓	✓							✓
	Linear Integrated Circuits and Applications	✓	✓	✓		✓							
	Control Systems	✓	✓	✓	✓	✓							✓
	PRACTICALS												
	Electrical Machines Lab II	✓	✓	✓	✓	✓							✓
	Linear and Digital Integrated Circuits Laboratory	✓		✓	✓						✓	✓	✓
	Technical Seminar									✓	✓	✓	
	THEORY												
SEM V	Power System Analysis	✓	✓	✓	✓	✓		✓					✓
	Microprocessors and Microcontrollers	✓		✓		✓			✓	✓		✓	✓
	Power Electronics	✓	✓	✓	✓	✓		✓					
	Digital Signal Processing	✓	✓	✓	✓	✓		✓					✓
	Object Oriented Programming			✓	✓	✓							✓
	Open Elective I												
	PRACTICALS												
	Control and Instrumentation Laboratory			✓	✓	✓	✓			✓	✓		

	Professional Communication									✓	✓	✓	
	Object Oriented Programming Laboratory			✓	✓	✓							✓
	THEORY												
SEM VI	Solid State Drives	✓	✓	✓	✓	✓		✓					
	Protection and Switchgear	✓	✓	✓	✓	✓		✓					✓
	Embedded Systems												
	Professional Elective I												
	Professional Elective II												
	PRACTICALS												
	Power Electronics and Drives Laboratory	✓		✓	✓						✓	✓	✓
	Microprocessors and Microcontrollers Laboratory	✓		✓	✓						✓	✓	✓
	Mini Project	✓		✓	✓						✓	✓	✓
	THEORY												
SEM VII	High Voltage Engineering	✓	✓	✓	✓	✓		✓					✓
	Power System Operation and Control	✓	✓	✓	✓	✓		✓					✓
	Renewable Energy Systems	✓	✓	✓	✓	✓		✓					✓
	Open Elective II												
	Professional Elective III												
	Professional Elective IV												
	PRACTICALS												
	Power System Simulation Laboratory	✓		✓	✓						✓	✓	✓
	Renewable Energy Systems Laboratory	✓		✓	✓						✓	✓	✓
SEM VIII	**THEORY**												
	Professional Elective V												

	Professional Elective VI												
	PRACTICALS												
	Project Work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

. **PROFESSIONAL ELECTIVE**

SL.NO.	**NAME OF THE SUBJECT**	**PROGRAM OUTCOMES**											
		a	b	c	d	e	f	g	h	i	j	k	l
	THEORY												
ELECTIVE – I	Advanced Control System		✓	✓					✓	✓			
	Visual Languages and Applications	✓	✓		✓	✓							
	Design of Electrical Apparatus	✓		✓	✓	✓		✓					
	Power Systems Stability				✓	✓							
	Modern Power Converters	✓		✓	✓	✓		✓					
	Intellectual Property Rights								✓		✓		✓
ELECTIVE – II	Principles of Robotics	✓		✓		✓							
	Special Electrical Machines	✓		✓	✓	✓			✓				
	Power Quality	✓		✓	✓	✓			✓				✓
	EHVAC Transmission	✓		✓	✓	✓			✓				✓
	Communication Engineering												
ELECTIVE – III	Disaster Management	✓		✓		✓	✓					✓	✓
	Human Rights			✓	✓	✓	✓						
	Operations Research	✓	✓	✓					✓	✓			✓
	Probability and Statistics												
	Fibre Optics and Laser Instrumentation	✓	✓			✓						✓	✓
	Foundation Skills in Integrated Product Development												

ELECTIVE – IV	System Identification and Adaptive Control	✓	✓	✓		✓							
	Computer Architecture	✓		✓		✓							
	Control of Electrical Drives	✓		✓		✓			✓				✓
	VLSI Design	✓	✓	✓			✓	✓					
	Power Systems Transients		✓		✓	✓							
	Total Quality Management		✓			✓	✓	✓	✓	✓	✓		
ELECTIVE – V	Flexible AC Transmission Systems	✓	✓	✓		✓					✓		✓
	Soft Computing Techniques	✓		✓		✓							
	Power Systems Dynamics	✓		✓		✓							
	SMPS and UPS	✓		✓		✓							
	Electric Energy Generation, Utilization and Conservation	✓	✓	✓	✓	✓		✓					✓
	Professional Ethics in Engineering	✓	✓		✓			✓				✓	✓
	Principals of Management					✓	✓			✓			
ELECTIVE – VI	Energy Management and Auditing		✓			✓	✓	✓	✓	✓	✓		
	Data Structures					✓	✓			✓			
	High Voltage Direct Current Transmission	✓	✓	✓					✓	✓			✓
	Microcontroller Based System Design	✓	✓	✓					✓	✓			✓
	Smart Grid	✓	✓	✓					✓	✓			✓
	Biomedical Instrumentation	✓		✓	✓	✓	✓						
	Fundamentals of Nano Science												

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I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	EE8251	Circuit Theory	PC	4	2	2	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
3.	EE8391	Electromagnetic Theory	PC	4	2	2	0	3
4.	EE8301	Electrical Machines - I	PC	4	2	2	0	3
5.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
6.	ME8792	Power Plant Engineering	ES	3	3	0	0	3
PRACTICALS								
7.	EC8311	Electronics Laboratory	ES	4	0	0	4	2
8.	EE8311	Electrical Machines Laboratory - I	PC	4	0	0	4	2
			TOTAL	**30**	**16**	**6**	**8**	**23**

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	EE8401	Electrical Machines - II	PC	4	2	2	0	3
3.	EE8402	Transmission and Distribution	PC	3	3	0	0	3
4.	EE8403	Measurements and Instrumentation	PC	3	3	0	0	3
5.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
6.	IC8451	Control Systems	PC	5	3	2	0	4
PRACTICALS								
7.	EE8411	Electrical Machines Laboratory - II	PC	4	0	0	4	2
8.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
9.	EE8412	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**32**	**18**	**4**	**10**	**25**

SEMESTER V

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8501	Power System Analysis	PC	3	3	0	0	3
2.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
3.	EE8552	Power Electronics	PC	3	3	0	0	3
4.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
5.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	EE8511	Control and Instrumentation Laboratory	PC	4	0	0	4	2
8.	HS8581	Professional Communication	EEC	2	0	0	2	1
9.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
			TOTAL	**29**	**17**	**2**	**10**	**23**

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8601	Solid State Drives	PC	3	3	0	0	3
2.	EE8602	Protection and Switchgear	PC	3	3	0	0	3
3.	EE8691	Embedded Systems	ES	3	3	0	0	3
4.		Professional Elective I	PE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
6.	EE8661	Power Electronics and Drives Laboratory	PC	4	0	0	4	2
7.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EE8611	Mini Project	EEC	4	0	0	4	2
			TOTAL	**27**	**15**	**0**	**12**	**21**

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EE8701	High Voltage Engineering	PC	3	3	0	0	3
2.	EE8702	Power System Operation and Control	PC	3	3	0	0	3
3.	EE8703	Renewable Energy Systems	PC	3	3	0	0	3
4.		Open Elective II*	OE	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
PRACTICALS								
7.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
8.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective V	PE	3	3	0	0	3
2.		Professional Elective VI	PE	3	3	0	0	3
PRACTICALS								
3.	EE8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 180

*Course from the curriculum of other UG Programmes.

PROFESSIONAL ELECTIVE –I (VI SEMESTER)

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IC8651	Advanced Control System	PE	4	2	2	0	3
2.	EE8001	Visual Languages and Applications	PE	3	3	0	0	3
3.	EE8002	Design of Electrical Apparatus	PE	3	3	0	0	3
4.	EE8003	Power Systems Stability	PE	3	3	0	0	3
5.	EE8004	Modern Power Converters	PE	3	3	0	0	3
6.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – II (VI SEMESTER)

1.	RO8591	Principles of Robotics	PE	3	3	0	0	3
2.	EE8005	Special Electrical Machines	PE	3	3	0	0	3
3.	EE8006	Power Quality	PE	3	3	0	0	3
4.	EE8007	EHVAC Transmission	PE	3	3	0	0	3
5.	EC8395	Communication Engineering	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – III (VII SEMESTER)

1.	GE8071	Disaster Management	PE	3	3	0	0	3
2.	GE8074	Human Rights	PE	3	3	0	0	3
3.	MG8491	Operations Research	PE	3	3	0	0	3
4.	MA8391	Probability and Statistics	PE	4	4	0	0	4
5.	EI8075	Fibre Optics and Laser Instrumentation	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – IV (VII SEMESTER)

1.	EE8008	System Identification and Adaptive Control	PE	3	3	0	0	3
2.	CS8491	Computer Architecture	PE	3	3	0	0	3
3.	EE8009	Control of Electrical Drives	PE	3	3	0	0	3
4.	EC8095	VLSI Design	PE	3	3	0	0	3
5.	EE8010	Power Systems Transients	PE	3	3	0	0	3
6.	GE8077	Total Quality Management	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – V (VIII SEMESTER)

1.	EE8011	Flexible AC Transmission Systems	PE	3	3	0	0	3
2.	EE8012	Soft Computing Techniques	PE	3	3	0	0	3
3.	EE8013	Power Systems Dynamics	PE	3	3	0	0	3
4.	EE8014	SMPS and UPS	PE	3	3	0	0	3
5.	EE8015	Electric Energy Generation, Utilization and Conservation	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3
7.	MG8591	Principles of Management	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – VI (VIII SEMESTER)

1.	EE8016	Energy Management and Auditing	PE	3	3	0	0	3
2.	CS8391	Data Structures	PE	3	3	0	0	3
3.	EE8017	High Voltage Direct Current Transmission	PE	3	3	0	0	3
4.	EE8018	Microcontroller Based System Design	PE	3	3	0	0	3
5.	EE8019	Smart Grid	PE	3	3	0	0	3
6.	EI8073	Biomedical Instrumentation	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

***Professional Electives are grouped according to elective number as was done previously.**

HUMANITIES AND SOCIALSCIENCES (HS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

BASIC SCIENCES (BS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics For Electronics Engineering	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and	ES		0	0	4	2

		Python programming Laboratory		4				
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
7.	ME8792	Power Plant Engineering	ES	3	3	0	0	3
8.	EC8311	Electronics Laboratory	ES	4	0	0	4	2
9.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
10.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
11.	EE8691	Embedded Systems	ES	3	3	0	0	3

PROFESSIONAL CORE (PC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8251	Circuit Theory	PC	4	2	2	0	3
2.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
3.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
4.	EE8391	Electromagnetic Theory	PC	4	2	2	0	3
5.	EE8301	Electrical Machines - I	PC	4	2	2	0	3
6.	EE8311	Electrical Machines Laboratory - I	PC	4	0	0	4	2
7.	EE8401	Electrical Machines - II	PC	4	2	2	0	3
8.	EE8402	Transmission and Distribution	PC	3	3	0	0	3
9.	EE8403	Measurements and Instrumentation	PC	3	3	0	0	3
10.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
11.	IC8451	Control Systems	PC	5	3	2	0	4
12.	EE8411	Electrical Machines Laboratory II	PC	4	0	0	4	2

13.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
14.	EE8501	Power System Analysis	PC	3	3	0	0	3
15.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
16.	EE8552	Power Electronics	PC	3	3	0	0	3
17.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
18.	EE8511	Control and Instrumentation Laboratory	PC	4	0	0	4	2
19.	EE8601	Solid State Drives	PC	3	3	0	0	3
20.	EE8602	Protection and Switchgear	PC	3	3	0	0	3
21.	EE8661	Power Electronics and Drives Laboratory	PC	4	0	0	4	2
22.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
23.	EE8701	High Voltage Engineering	PC	3	3	0	0	3
24.	EE8702	Power System Operation and Control	PC	3	3	0	0	3
25.	EE8703	Renewable Energy Systems	PC	3	3	0	0	3
26.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
27.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8412	Technical seminar	EEC	2	0	0	2	1
2.	HS8581	Professional Communication	EEC	2	0	0	2	1
3.	EE8611	Mini Project	EEC	4	0	0	4	2
4.	EE8811	Project work	EEC	20	0	0	20	10

SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	4	7	-	-	-	-	-		11
2.	BS	12	7	4	4	-	-	-		27
3.	ES	9	6	8	-	5	3	-		31
4.	PC	-	5	11	20	14	10	13	-	73
5.	PE						6	6	6	18
6.	OE					3	-	3		6
7.	EEC				1	1	2		10	14
	Total	25	25	23	25	23	21	22	16	180
	Non Credit / Mandatory	-	-	-	-	-	-	-	-	0

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OPEN ELECTIVES (Offered by Other Branches)

V SEMESTER
OPEN ELECTIVE I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCY551	Advanced Engineering Chemistry	OE	3	3	0	0	3
2.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
3.	OAT551	Automotive Systems	OE	3	3	0	0	3
4.	OIT551	Database Management Systems	OE	3	3	0	0	3
5.	OIT552	Cloud Computing	OE	3	3	0	0	3
6.	OMF551	Product Design and Development	OE	3	3	0	0	3
7.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
8.	OME552	Vibration and Noise Control	OE	3	3	0	0	3
9.	OMD551	Basics of Biomedical Instrumentation	OE	3	3	0	0	3

VII SEMESTER
OPEN ELECTIVE II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OBT751	Analytical Methods and Instrumentation	OE	3	3	0	0	3
2.	OME751	Design of Experiments	OE	3	3	0	0	3
3.	OCS752	Introduction to C Programming	OE	3	3	0	0	3
4.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
5.	OEC753	Signals and Systems	OE	4	4	0	0	4
6.	OML751	Testing of Materials	OE	3	3	0	0	3

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I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	EC8251	Circuit Analysis	PC	4	4	0	0	4
6.	EC8252	Electronic Devices	PC	3	3	0	0	3
PRACTICALS								
7.	EC8261	Circuits and Devices Laboratory	PC	4	0	0	4	2
8.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
			TOTAL	**29**	**21**	**0**	**8**	**25**

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
3.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
4.	EC8352	Signals and Systems	PC	4	4	0	0	4
5.	EC8392	Digital Electronics	PC	3	3	0	0	3
6.	EC8391	Control Systems Engineering	PC	3	3	0	0	3
PRACTICALS								
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening &Speaking	EEC	2	0	0	2	1
			TOTAL	**30**	**20**	**0**	**10**	**25**

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8451	Probability and Random Processes	BS	4	4	0	0	4
2.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
3.	EC8491	Communication Theory	PC	3	3	0	0	3
4.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
5.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
8.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**20**	**0**	**8**	**24**

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8501	Digital Communication	PC	3	3	0	0	3
2.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
3.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
4.	EC8551	Communication Networks	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
8.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
9.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
2.	EC8095	VLSI Design	PC	3	3	0	0	3
3.	EC8652	Wireless Communication	PC	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3
5.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
6.		Professional Elective -II	PE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2
9.	EC8611	Technical Seminar	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**0**	**12**	**24**

SEMESTER VII

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EC8701	Antennas and Microwave Engineering	PC	3	3	0	0	3
2.	EC8751	Optical Communication	PC	3	3	0	0	3
3.	EC8791	Embedded and Real Time Systems	PC	3	3	0	0	3
4.	EC8702	Ad hoc and Wireless Sensor Networks	PC	3	3	0	0	3
5.		Professional Elective -III	PE	3	3	0	0	3
6.		Open Elective - II	OE	3	3	0	0	3
PRACTICALS								
7.	EC8711	Embedded Laboratory	PC	4	0	0	4	2
8.	EC8761	Advanced Communication Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	EC8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 186

HUMANITIES AND SOCIALSCIENCES (HS)

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

BASIC SCIENCES (BS)

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
7.	MA8352	Linear Algebra and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8451	Probability and Random Processes	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8254	Basic Electrical and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EC8393	Fundamentals of Data Structures In C	ES	3	3	0	0	3
7.	EC8381	Fundamentals of Data Structures in C Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8251	Circuit Analysis	PC	4	4	0	0	4
2.	EC8252	Electronic Devices	PC	3	3	0	0	3
3.	EC8261	Circuits and Devices Lab	PC	4	0	0	4	2
4.	EC8351	Electronic Circuits- I	PC	3	3	0	0	3
5.	EC8352	Signals and Systems	PC	4	4	0	0	4
6.	EC8392	Digital Electronics	PC	3	3	0	0	3
7.	EC8391	Control System Engineering	PC	3	3	0	0	3
8.	EC8361	Analog and Digital Circuits Laboratory	PC	4	0	0	4	2
9.	EC8452	Electronic Circuits II	PC	3	3	0	0	3
10.	EC8491	Communication Theory	PC	3	3	0	0	3
11.	EC8451	Electromagnetic Fields	PC	4	4	0	0	4
12.	EC8453	Linear Integrated Circuits	PC	3	3	0	0	3
13.	EC8461	Circuits Design and Simulation Laboratory	PC	4	0	0	4	2
14.	EC8462	Linear Integrated Circuits Laboratory	PC	4	0	0	4	2
15.	EC8501	Digital Communication	PC	3	3	0	0	3
16.	EC8553	Discrete-Time Signal Processing	PC	4	4	0	0	4
17.	EC8651	Transmission Lines and RF Systems	PC	3	3	0	0	3
18.	EC8552	Computer Architecture and Organization	PC	3	3	0	0	3
19.	EC8551	Communication Networks	PC	3	3	0	0	3
20.	EC8562	Digital Signal Processing Laboratory	PC	4	0	0	4	2
21.	EC8561	Communication Systems Laboratory	PC	4	0	0	4	2
22.	EC8563	Communication Networks Laboratory	PC	4	0	0	4	2
23.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
24.	EC8095	VLSI Design	PC	3	3	0	0	3
25.	EC8652	Wireless Communication	PC	3	3	0	0	3
26.	EC8661	VLSI Design Laboratory	PC	4	0	0	4	2

27.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
28.	EC8701	Antennas and Microwave Engineering	PC	3	3	0	0	3
29.	EC8751	Optical Communication	PC	3	3	0	0	3
30.	EC8791	Embedded and Real Time Systems	PC	3	3	0	0	3
31.	EC8702	Ad hoc and Wireless Sensor Networks	PC	3	3	0	0	3
32.	EC8711	Embedded Laboratory	PC	4	0	0	4	2
33.	EC8761	Advanced Communication Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES (PE)*

SEMESTER V

ELECTIVE I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8392	Object Oriented Programming	PE	3	3	0	0	3
2.	EC8073	Medical Electronics	PE	3	3	0	0	3
3.	CS8493	Operating Systems	PE	3	3	0	0	3
4.	EC8074	Robotics and Automation	PE	3	3	0	0	3
5.	EC8075	Nano Technology and Applications	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VI

ELECTIVE II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8792	Cryptography and Network Security	PE	3	3	0	0	3
2.	EC8091	Advanced Digital Signal Processing	PE	3	3	0	0	3
3.	EC8001	MEMS and NEMS	PE	3	3	0	0	3
4.	EC8002	Multimedia Compression and Communication	PE	3	3	0	0	3
5.	EC8003	CMOS Analog IC Design	PE	3	3	0	0	3
6.	EC8004	Wireless Networks	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII

ELECTIVE III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8092	Advanced Wireless Communication	PE	3	3	0	0	3
2.	EC8071	Cognitive Radio	PE	3	3	0	0	3
3.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
4.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
5.	EC8005	Electronics Packaging and Testing	PE	3	3	0	0	3
6.	EC8006	Mixed Signal IC Design	PE	3	3	0	0	3
7.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE IV

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8072	Electro Magnetic Interference and Compatibility	PE	3	3	0	0	3
2.	EC8007	Low power SoC Design	PE	3	3	0	0	3
3.	EC8008	Photonic Networks	PE	3	3	0	0	3
4.	EC8009	Compressive Sensing	PE	3	3	0	0	3
5.	EC8093	Digital Image Processing	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE V

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EC8010	Video Analytics	PE	3	3	0	0	3
2.	EC8011	DSP Architecture and Programming	PE	3	3	0	0	3
3.	EC8094	Satellite Communication	PE	3	3	0	0	3
4.	CS8086	Soft Computing	PE	3	3	0	0	3
5.	IT8006	Principles of Speech Processing	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

***Professional Electives are grouped according to elective number as was done previously.**

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
2.	EC8611	Technical Seminar	EEC	2	0	0	2	1
3.	HS8581	Professional Communication	EEC	2	0	0	2	1
4.	EC8811	Project Work	EEC	20	0	0	20	10

SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	**HS**	4	4		3		3			**14**	**7.56%**
2.	**BS**	12	7	4	4					**27**	**14.6%**
3.	**ES**	9	5	5						**19**	**10.27%**
4.	**PC**		9	15	17	19	16	16		**92**	**50%**
5.	**PE**					3	3	3	6	**15**	**8.10%**
6.	**OE**					3		3		**6**	**3.24%**
7.	**EEC**			1			2		10	**13**	**6.48%**
	Total	**25**	**25**	**25**	**24**	**25**	**24**	**22**	**16**	**186**	
8.	**Non Credit / Mandatory**										

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OPEN ELECTIVES (Offered by Other Branches)

SEMESTER V

OPEN ELECTIVE - I

SL. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OMD551	Basic of Biomedical Instrumentation	OE	3	3	0	0	3
3.	OBM551	Bio Chemistry	OE	3	3	0	0	3
4.	OIT552	Cloud Computing	OE	3	3	0	0	3
5.	OIT551	Database Management Systems	OE	3	3	0	0	3
6.	OTL552	Digital Audio Engineering	OE	3	3	0	0	3
7.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
8.	OBT553	Fundamentals of Nutrition	OE	3	3	0	0	3
9.	OCE552	Geographic Information System	OE	3	3	0	0	3
10.	OPY551	Herbal Technology	OE	3	3	0	0	3
11.	OMD552	Hospital Waste Management	OE	3	3	0	0	3
12.	OCH551	Industrial Nanotechnology	OE	3	3	0	0	3
13.	OBT551	Introduction to Bioenergy and Biofuels	OE	3	3	0	0	3
14.	OEI551	Logic and Distributed Control Systems	OE	3	3	0	0	3
15.	OBM552	Medical Physics	OE	3	3	0	0	3
16.	OML552	Microscopy	OE	3	3	0	0	3
17.	OEI552	SCADA System and Applications Management	OE	3	3	0	0	3
18.	OBT554	Principles of Food Preservation	OE	3	3	0	0	3
19.	OMF551	Product Design and Development	OE	3	3	0	0	3
20.	ORO551	Renewable Energy Sources	OE	3	3	0	0	3
21.	OCS551	Software Engineering	OE	3	3	0	0	3
22.	OTL551	Space Time Wireless Communication	OE	3	3	0	0	3
23.	OTL553	Telecommunication Network Management	OE	3	3	0	0	3
24.	OMD553	Telehealth Technology	OE	3	3	0	0	3
25.	OTL554	Wavelets and its Applications	OE	3	3	0	0	3
26.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

SEMESTER VII

OPEN ELECTIVE - II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OBM751	Basics of Human Anatomy and Physiology	OE	3	3	0	0	3
3.	OGI751	Climate Change and its Impact	OE	3	3	0	0	3
4.	OPY751	Clinical Trials	OE	3	3	0	0	3
5.	OCS751	Data Structures and Algorithms	OE	3	3	0	0	3
6.	OME751	Design of Experiments	OE	3	3	0	0	3
7.	OCH752	Energy Technology	OE	3	3	0	0	3
8.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
9.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
10.	OEN751	Green Building Design	OE	3	3	0	0	3
11.	OBM752	Hospital Management	OE	3	3	0	0	3
12.	OME754	Industrial Safety	OE	3	3	0	0	3
13.	OCS752	Introduction to C Programming	OE	3	3	0	0	3
14.	OBT753	Introduction of Cell Biology	OE	3	3	0	0	3
15.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
16.	OAN751	Low Cost Automation	OE	3	3	0	0	3
17.	OBT752	Microbiology	OE	3	3	0	0	3
18.	OMV751	Marine Vehicles	OE	3	3	0	0	3
19.	OAE752	Principles of Flight Mechanics	OE	3	3	0	0	3
20.	OIE751	Robotics	OE	3	3	0	0	3
21.	OME752	Supply Chain Management	OE	3	3	0	0	3
22.	OME753	Systems Engineering	OE	3	3	0	0	3
23.	OTL751	Telecommunication System Modeling and Simulation	OE	3	3	0	0	3
24.	OML751	Testing of Materials	OE	3	3	0	0	3
25.	OIC751	Transducer Engineering	OE	3	3	0	0	3
26.	OCY751	Waste Water Treatment	OE	3	3	0	0	3

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CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA5152	Applied Mathematics for Electronics Engineers	FC	4	4	0	0	4
2.	AP5151	Advanced Digital System Design	PC	3	3	0	0	3
3.	AP5152	Advanced Digital Signal Processing	PC	5	3	2	0	4
4.	AP5191	Embedded System Design	PC	3	3	0	0	3
5.	AP5101	Sensors, Actuators and Interface Electronics	PC	3	3	0	0	3
6.		Professional Elective I	PC	3	3	0	0	3
PRACTICALS								
7.	AP5111	Electronic System Design Laboratory I	PC	4	0	0	4	2
			TOTAL	**25**	**19**	**2**	**4**	**22**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	AP5251	Soft Computing and Optimization Techniques	PC	3	3	0	0	3
2.	AP5252	ASIC and FPGA Design	PC	3	3	0	0	3
3.	AP5291	Hardware – Software Co-design	PC	3	3	0	0	3
4.	AP5292	Digital Image Processing	PC	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7.	AP5211	Electronic System Design Laboratory II	PC	4	0	0	4	2
8.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
			TOTAL	**24**	**18**	**0**	**6**	**21**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	AP5301	Advanced Microprocessors and Microcontrollers Architectures	PC	3	3	0	0	3
2.		Professional Elective IV	PE	3	3	0	0	3
3.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
4.	AP5311	Project Work Phase I	EEC	12	0	0	12	6
			TOTAL	**21**	**9**	**0**	**12**	**15**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICALS								
1.	AP5411	Project Work Phase II	EEC	24	0	0	24	12
				TOTAL	**0**	**0**	**24**	**12**

TOTAL NO. OF CREDITS: 70

FOUNDATION COURSES (FC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA5152	Applied Mathematics for Electronics Engineers	FC	4	4	0	0	4

PROFESSIONAL CORE (PC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AP5151	Advanced Digital System Design	PC	3	3	0	0	3
2.	AP5152	Advanced Digital Signal Processing	PC	5	3	2	0	4
3.	AP5191	Embedded System Design	PC	3	3	0	0	3
4.	AP5101	Sensors, Actuators and Interface Electronics	PC	3	3	0	0	3
5.	AP5111	Electronic System Design Lab I	PC	4	0	0	4	2
6.	AP5251	Soft Computing and Optimization Techniques	PC	3	3	0	0	3

7.	AP5252	ASIC and FPGA Design	PC	3	3	0	0	3
8.	AP5291	Hardware – Software Co-design	PC	3	3	0	0	3
9.	AP5292	Digital Image Processing	PC	3	3	0	0	3
10.	AP5211	Electronic System Design Lab II	PC	4	0	0	4	2
11.	AP5301	Advanced Microprocessor and Microcontroller Architecture	PC	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSE (EEC)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5281	Term Paper Writing and Seminar	EEC	2	0	0	2	1
2.	AP5311	Project Work Phase – I	EEC	12	0	0	12	6
3.	AP5411	Project Work Phase – II	EEC	24	0	0	24	12

PROFESSIONAL ELECTIVES (PE)*

SEMESTER I

ELECTIVE I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AP5091	Digital Control Engineering	PE	3	3	0	0	3
2.	AP5001	Computer Architecture and Parallel Processing	PE	3	3	0	0	3
3.	AP5002	CAD for VLSI Circuits	PE	3	3	0	0	3
4.	CU5292	Electromagnetic Interference and Compatibility	PE	3	3	0	0	3

SEMESTER II

ELECTIVE II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AP5003	VLSI Design Techniques	PE	3	3	0	0	3
2.	AP5071	Nano Electronics	PE	3	3	0	0	3
3.	CU5097	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
4.	AP5004	High Performance Networks	PE	3	3	0	0	3

SEMESTER II
ELECTIVE III

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	DS5191	DSP Processor Architecture and Programming	PE	3	3	0	0	3
2.	AP5073	RF System Design	PE	3	3	0	0	3
3.	AP5074	Speech and Audio Signal Processing	PE	3	3	0	0	3
4.	AP5092	Solid State Device Modeling and Simulation	PE	3	3	0	0	3

SEMESTER III
ELECTIVE IV

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CP5292	Internet of Things	PE	3	3	0	0	3
2.	AP5005	System on Chip Design	PE	3	3	0	0	3
3.	AP5093	Robotics	PE	3	3	0	0	3
4.	AP5006	Physical Design of VLSI Circuits	PE	3	3	0	0	3

SEMESTER III
ELECTIVE V

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	AP5094	Signal Integrity for High Speed Design	PE	3	3	0	0	3
2.	VL5091	MEMS and NEMS	PE	3	3	0	0	3
3.	AP5007	Secure Computing Systems	PE	3	3	0	0	3
4.	AP5008	Pattern Recognition	PE	3	3	0	0	3

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B.E. ELECTRONICS AND INSTRUMENTATION ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

Educational Objectives

Bachelor of Electronics and Instrumentation Engineering curriculum is designed to prepare the graduates having attitude and knowledge to

1. Have successful technical and professional careers in their chosen fields such as Process Control, Electronics & Information Technology.
2. Engross in life long process of learning to keep themselves abreast of new developments in the field of Electronics & Instrumentation

Programme Outcomes

The graduates will have the ability to

a. Apply the Mathematical knowledge and the basics of Science and Engineering to solve the problems pertaining to Electronics and Instrumentation Engineering.
b. Identify and formulate Instrumentation Engineering problems from research literature and be able to analyze the problem using first principles of Mathematics and Engineering Sciences.
c. Come out with solutions for the complex problems and to design system components or process that fulfill the particular needs taking into account public health and safety and the social, cultural and environmental issues.
d. Draw well-founded conclusions applying the knowledge acquired from research and research methods including design of experiments, analysis and interpretation of data and synthesis of information and to arrive at significant conclusion.
e. Form, select and apply relevant techniques, resources and Engineering and IT tools for Engineering activities like electronic prototyping, modeling and control of systems/processes and also being conscious of the limitations.
f. Understand the role and responsibility of the Professional Instrumentation Engineer and to assess societal, health, safety issues based on the reasoning received from the contextual knowledge.
g. Be aware of the impact of professional Engineering solutions in societal and environmental contexts and exhibit the knowledge and the need for sustainable Development.
h. Apply the principles of Professional Ethics to adhere to the norms of the engineering practice and to discharge ethical responsibilities.
i. Function actively and efficiently as an individual or a member/leader of different teams and multidisciplinary projects.
j. Communicate efficiently the engineering facts with a wide range of engineering community and others, to understand and prepare reports and design documents; to make effective presentations and to frame and follow instructions.
k. Demonstrate the acquisition of the body of engineering knowledge and insight and Management Principles and to apply them as member / leader in teams and multidisciplinary environments.
l. Recognize the need for self and life-long learning, keeping pace with technological challenges in the broadest sense.

PEO \ PO	a	b	c	d	e	f	g	h	i	j	k	l
1	✓	✓	✓	✓	✓			✓	✓	✓	✓	
2	✓	✓	✓	✓	✓	✓	✓				✓	✓

SEMESTER	NAME OF THE SUBJECT	PROGRAM OUTCOMES											
		a	b	c	d	e	f	g	h	i	j	k	l
	THEORY												
SEM I	Communicative English									✓	✓		✓
	Engineering Mathematics- I	✓	✓			✓							✓
	Engineering Physics	✓	✓	✓		✓		✓					✓
	Engineering Chemistry	✓	✓	✓		✓							✓
	Problem Solving and Python Programming	✓	✓	✓	✓	✓							✓
	Engineering Graphics			✓	✓								
	PRACTICAL												
	Problem Solving and Python Programming Laboratory	✓		✓	✓	✓	✓				✓		✓
	Physics and Chemistry Laboratory	✓	✓										
	THEORY												
SEM II	Technical English									✓	✓		✓
	Engineering Mathematics- II	✓	✓	✓		✓							✓
	Physics For Electronics Engineering	✓	✓	✓		✓		✓					✓
	Basic Civil and Mechanical Engineering				✓		✓						
	Circuit Theory	✓	✓	✓	✓	✓							✓
	Environmental Science and Engineering	✓	✓			✓	✓	✓	✓				✓
	PRACTICALS												
	Engineering Practices Laboratory	✓		✓	✓	✓	✓				✓		
	Electric Circuits Laboratory	✓		✓	✓	✓	✓				✓		✓
	THEORY												
SEM III	Transforms and Partial Differential Equations	✓	✓			✓							✓
	Electron Devices and Circuits	✓	✓	✓	✓	✓							✓
	Digital Logic Circuits				✓	✓							
	Electrical Measurements	✓			✓	✓							✓
	Transducers Engineering	✓	✓	✓	✓	✓							✓
	Object Oriented Programming			✓	✓	✓							✓

	PRACTICALS												
	Measurements and Transducers Laboratory					✓	✓						✓
	Object Oriented Programming Laboratory			✓	✓	✓							✓
	THEORY	a	b	c	d	e	f	g	h	i	j	k	l
SEM IV	Numerical Methods	✓	✓	✓									✓
	Electrical Machines		✓	✓			✓			✓			✓
	Industrial Instrumentation - I			✓	✓	✓	✓	✓					
	Linear integrated Circuits and Applications	✓	✓	✓		✓							
	Control Systems	✓	✓	✓	✓								
	Communication Engineering	✓		✓				✓					
	PRACTICALS												
	Devices and Machines Laboratory	✓			✓	✓						✓	✓
	Linear and Digital integrated Circuits Laboratory	✓		✓	✓						✓	✓	✓
	THEORY												
SEM V	Analytical Instruments				✓	✓	✓						
	Industrial Instrumentation - II			✓	✓	✓	✓	✓					
	Process Control	✓	✓	✓	✓	✓	✓						
	Microprocessors and Microcontrollers					✓		✓		✓			✓
	Digital Signal Processing	✓	✓	✓		✓							
	Open Elective I												
	PRACTICALS												
	Industrial Instrumentation Laboratory			✓	✓	✓	✓			✓	✓		
	Microprocessors and Microcontrollers Laboratory		✓	✓	✓					✓	✓		
	THEORY												
SEM VI	Logic and Distributed Control System	✓		✓		✓							
	Computer Control of Processes	✓	✓		✓								
	Data Structures												

	Electronic Instrumentation			✓	✓	✓							
	Professional Elective I												
	Professional Elective II												
	PRACTICALS	a	b	c	d	e	f	g	h	i	j	k	l
	Data Structures Laboratory			✓	✓	✓	✓				✓		✓
	Process Control Laboratory		✓	✓	✓	✓	✓			✓	✓		
	Professional Communication									✓	✓	✓	
	THEORY												
SEM VII	Industrial Data Networks				✓	✓							
	Embedded Systems			✓	✓	✓					✓		✓
	Digital Image Processing												
	Professional Elective III												
	Professional Elective IV												
	Open Elective - II												
	PRACTICALS												
	Industrial Automation Laboratory		✓		✓	✓	✓			✓			
	Instrumentation System Design Laboratory			✓	✓	✓					✓		
	THEORY												
SEM VIII	Professional Elective V			✓	✓	✓	✓						✓
	Professional Elective VI												
	PRACTICALS												
	Project Work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

. **PROFESSIONAL ELECTIVE**

SL.NO.	NAME OF THE SUBJECT	PROGRAM OUTCOMES											
		a	b	c	d	e	f	g	h	i	j	k	l
	THEORY												
ELECTIVE – I	MEMS and Nano Science		✓	✓					✓	✓			
	Power Electronics and Drives	✓	✓		✓	✓							
	System Identification	✓		✓	✓	✓		✓					
	Computer Networks				✓	✓							
	Intellectual Property Rights								✓		✓		✓
ELECTIVE – II	Advanced Instrumentation Systems	✓		✓		✓							
	Adaptive Control	✓		✓	✓	✓			✓				
	Applied Soft Computing	✓	✓			✓						✓	✓
ELECTIVE – III	Fibre Optics and Laser Instrumentation	✓		✓									
	Electromagnetic Theory	✓	✓	✓		✓							
	Disaster Management		✓		✓		✓	✓					✓
	Human Rights												
	Operations Research	✓	✓	✓					✓	✓			✓
	Foundation Skills in Integrated Product Development												
ELECTIVE – IV	Thermal Power Plant Instrumentation	✓	✓	✓		✓							
	Advanced Digital Signal Processing	✓		✓		✓							
	Optimal Control	✓		✓		✓			✓				
	Radar and Navigational Aids	✓	✓	✓			✓	✓					
	Total Quality Management		✓			✓	✓	✓	✓	✓	✓		
	VLSI Design	✓		✓		✓							
ELECTIVE – V	Biomedical Instrumentation			✓	✓	✓	✓						✓

	Instrumentation in Petrochemical Industries	✓		✓		✓							
	Professional Ethics in Engineering	✓	✓		✓			✓				✓	✓
	Principles of Management					✓	✓			✓			
ELECTIVE – VI	Project Management and Finance						✓			✓			
	Advanced Process Control	✓	✓	✓	✓	✓	✓						
	Unit Operation and Control	✓		✓		✓					✓		✓
	Robotics and Automation	✓	✓	✓		✓							
	Fundamentals of Nano Science												

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRONICS AND INSTRUMENTATION ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA & SYLLABI

SEMESTER I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	EE8251	Circuit Theory	PC	4	2	2	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
3.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
4.	EI8351	Electrical Measurements	PC	4	2	2	0	3
5.	EI8352	Transducers Engineering	PC	3	3	0	0	3
6.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
PRACTICALS								
7.	EI8361	Measurements and Transducers Laboratory	PC	4	0	0	4	2
8.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
			TOTAL	**29**	**17**	**4**	**8**	**23**

SEMESTER IV

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8491	Numerical Methods	BS	4	4	0	0	4
2.	EI8451	Electrical Machines	ES	3	3	0	0	3
3.	EI8452	Industrial Instrumentation - I	PC	3	3	0	0	3
4.	EE8451	Linear Integrated Circuits and Applications	PC	3	3	0	0	3
5.	IC8451	Control Systems	PC	5	3	2	0	4
6.	EC8395	Communication Engineering	ES	3	3	0	0	3
PRACTICALS								
7.	EI8461	Devices and Machines Laboratory	PC	4	0	0	4	2
8.	EE8461	Linear and Digital Integrated Circuits Laboratory	PC	4	0	0	4	2
			TOTAL	**29**	**19**	**2**	**8**	**24**

SEMESTER V

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EI8551	Analytical Instruments	PC	3	3	0	0	3
2.	EI8552	Industrial Instrumentation - II	PC	3	3	0	0	3
3.	EI8553	Process Control	PC	4	2	2	0	3
4.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
5.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
6.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
7.	EI8561	Industrial Instrumentation Laboratory	PC	4	0	0	4	2
8.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**16**	**4**	**8**	**22**

SEMESTER VI

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EI8651	Logic and Distributed Control System	PC	3	3	0	0	3
2.	EI8691	Computer Control of Processes	PC	3	3	0	0	3
3.	CS8391	Data Structures	ES	3	3	0	0	3
4.	EI8692	Electronic Instrumentation	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
PRACTICALS								
7.	CS8381	Data Structures Laboratory	ES	4	0	0	4	2
8.	EI8661	Process Control Laboratory	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	EI8751	Industrial Data Networks	PC	3	3	0	0	3
2.	EE8691	Embedded Systems	PC	3	3	0	0	3
3.	EC8093	Digital Image Processing	PC	3	3	0	0	3
4.		Professional Elective III	PE	3	3	0	0	3
5.		Professional Elective IV	PE	3	3	0	0	3
6.		Open Elective II*	OE	3	3	0	0	3
PRACTICALS								
7.	EI8761	Industrial Automation Laboratory	PC	4	0	0	4	2
8.	EI8762	Instrumentation System Design Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective V	PE	3	3	0	0	3
2.		Professional Elective VI	PE	3	3	0	0	3
PRACTICALS								
3.	EI8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS:180

*Course from the curriculum of other UG Programmes.

PROFESSIONAL ELECTIVE – I (VI SEMESTER)

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8072	MEMS and Nano Science	PE	3	3	0	0	3
2.	EI8077	Power Electronics and Drives	PE	3	3	0	0	3
3.	IC8072	System Identification	PE	4	2	2	0	3
4.	EI8074	Computer Networks	PE	4	2	2	0	3
5.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – II (VI SEMESTER)

1.	EI8071	Adaptive Control	PE	4	2	2	0	3
2.	EI8072	Advanced Instrumentation Systems	PE	3	3	0	0	3
3.	EE8071	Applied Soft Computing	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – III (VII SEMESTER)

1.	EI8075	Fibre Optics and Laser Instrumentation	PE	3	3	0	0	3
2.	EE8391	Electromagnetic Theory	PE	4	2	2	0	3
3.	GE8071	Disaster Management	PE	3	3	0	0	3
4.	GE8074	Human Rights	PE	3	3	0	0	3
5.	MG8491	Operations Research	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – IV (VII SEMESTER)

1.	EI8092	Thermal Power Plant Instrumentation	PE	3	3	0	0	3
2.	EC8091	Advanced Digital Signal Processing	PE	3	3	0	0	3
3.	EI8076	Optimal Control	PE	4	2	2	0	3
4.	TL8071	Radar and Navigational Aids	PE	3	3	0	0	3
5.	GE8077	Total Quality Management	PE	3	3	0	0	3
6.	EC8095	VLSI Design	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – V (VIII SEMESTER)

1.	EI8073	Biomedical Instrumentation	PE	3	3	0	0	3
2.	EI8091	Instrumentation in Petrochemical Industries	PE	3	3	0	0	3
3.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3
4.	MG8591	Principles of Management	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – VI (VIII SEMESTER)

1.	EI8078	Project Management and Finance	PE	3	3	0	0	3
2.	IC8071	Advanced Process Control	PE	4	2	2	0	3
3.	EI8093	Unit Operation and Control	PE	3	3	0	0	3
4.	EI8079	Robotics and Automation	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

***Professional Electives are grouped according to elective number as was done previously.**

HUMANITIES AND SOCIALSCIENCES (HS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

BASIC SCIENCES (BS)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3

4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8253	Physics for Electronics Engineering	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

S.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python programming Laboratory	ES	4	0	0	4	2
4.	BE8252	Basic Civil and Mechanical Engineering	ES	4	4	0	0	4
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	EC8353	Electron Devices and Circuits	ES	3	3	0	0	3
7.	CS8392	Object Oriented Programming	ES	3	3	0	0	3
8.	CS8383	Object Oriented Programming Laboratory	ES	4	0	0	4	2
9.	EI8451	Electrical Machines	ES	3	3	0	0	3
10.	EC8395	Communication Engineering	ES	3	3	0	0	3
11.	CS8391	Data Structures	ES	3	3	0	0	3
12.	CS8381	Data Structures Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	EE8251	Circuit Theory	PC	4	2	2	0	3
2.	EE8261	Electric Circuits Laboratory	PC	4	0	0	4	2
3.	EE8351	Digital Logic Circuits	PC	4	2	2	0	3
4.	EI8351	Electrical Measurements	PC	4	2	2	0	3
5.	EI8352	Transducers Engineering	PC	3	3	0	0	3
6.	EI8361	Measurements and Transducers Laboratory	PC	4	0	0	4	2
7.	EI8452	Industrial Instrumentation - I	PC	3	3	0	0	3
8.	EE8451	Linear integrated Circuits and Applications	PC	3	3	0	0	3
9.	IC8451	Control Systems	PC	5	3	2	0	4
10.	EI8461	Devices and Machines Laboratory	PC	4	0	0	4	2
11.	EE8461	Linear and Digital integrated Circuits Laboratory	PC	4	0	0	4	2
12.	EI8551	Analytical Instruments	PC	3	3	0	0	3
13.	EI8552	Industrial Instrumentation - II	PC	3	3	0	0	3
14.	EI8553	Process Control	PC	4	2	2	0	3
15.	EE8551	Microprocessors and Microcontrollers	PC	3	3	0	0	3
16.	EE8591	Digital Signal Processing	PC	4	2	2	0	3
17.	EI8561	Industrial Instrumentation Laboratory	PC	4	0	0	4	2
18.	EE8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
19.	EI8651	Logic and Distributed Control System	PC	3	3	0	0	3

20.	EI8691	Computer Control of Processes	PC	3	3	0	0	3
21.	EI8692	Electronic Instrumentation	PC	3	3	0	0	3
22.	EI8661	Process Control Laboratory	PC	4	0	0	4	2
23.	EI8751	Industrial Data Networks	PC	3	3	0	0	3
24.	EE8691	Embedded Systems	PC	3	3	0	0	3
25.	EC8093	Digital Image Processing	PC	3	3	0	0	3
26.	EI8761	Industrial Automation Laboratory	PC	4	0	0	4	2
27.	EI8762	Instrumentation System Design Laboratory	PC	4	0	0	4	2

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8581	Professional Communication	EEC	2	0	0	2	1
2.	EI8811	Project work	EEC	20	0	0	20	10

SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	4	7	-	-		-	-		11
2.	BS	12	7	4	4		-	-		27
3.	ES	9	6	8	6		5	-		34
4.	PC	-	5	11	14	19	11	13		73
5.	PE						6	6	6	18
6.	OE					3		3	-	6
7.	EEC						1		10	11
	Total	25	25	23	24	22	23	22	16	180
	Non Credit / Mandatory	-	-	-	-	-	-	-	-	0

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. ELECTRONICS AND INSTRUMENTATION ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
OPEN ELECTIVES (Offered by Other Branches)

V SEMESTER
OPEN ELECTIVE I

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCY551	Advanced Engineering Chemistry	OE	3	3	0	0	3
2.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
3.	OAT551	Automotive Systems	OE	3	3	0	0	3
4.	OIT551	Database Management Systems	OE	3	3	0	0	3
5.	OIT552	Cloud Computing	OE	3	3	0	0	3
6.	OMF551	Product Design and Development	OE	3	3	0	0	3
7.	OME552	Vibration and Noise Control	OE	3	3	0	0	3

VII SEMESTER
OPEN ELECTIVE II

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OBT751	Analytical Methods and Instrumentation	OE	3	3	0	0	3
2.	OEC752	Communication Networks	OE	3	3	0	0	3
3.	OME751	Design of Experiments	OE	3	3	0	0	3
4.	OME754	Industrial Safety	OE	3	3	0	0	3
5.	OCS752	Introduction to C Programming	OE	3	3	0	0	3
6.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
7.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
8.	OEC753	Signals and Systems	OE	4	4	0	0	4
9.	OML751	Testing of Materials	OE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

B.E. MECHANICAL ENGINEERING

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES:

Bachelor of Mechanical Engineering curriculum is designed to impart Knowledge, Skill and Attitude on the graduates to

1. Have a successful career in Mechanical Engineering and allied industries.
2. Have expertise in the areas of Design, Thermal, Materials and Manufacturing.
3. Contribute towards technological development through academic research and industrial practices.
4. Practice their profession with good communication, leadership, ethics and social responsibility.
5. Graduates will adapt to evolving technologies through life-long learning.

PROGRAMME OUTCOMES

1. An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems.
2. An ability to identify, formulates, and solve complex engineering problems. with high degree of competence.
3. An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.
4. An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability.
5. An ability to use modern tools, software and equipment to analyze multidisciplinary problems.
6. An ability to demonstrate on professional and ethical responsibilities.
7. An ability to communicate, write reports and express research findings in a scientific community.
8. An ability to adapt quickly to the global changes and contemporary practices.
9. An ability to engage in life-long learning.

PEO / PO Mapping

Programme Educational Objectives	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
I	✓	✓	✓	✓	✓	✓	✓	✓	✓
II	✓	✓	✓		✓			✓	
III		✓		✓	✓	✓		✓	
IV					✓	✓	✓		✓
V		✓	✓	✓	✓				✓

		COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
YEAR 1	SEM 1	Communicative English							✓		
		Engineering Mathematics I	✓	✓	✓						✓
		Engineering Physics	✓	✓	✓						✓
		Engineering Chemistry				✓					
		Problem Solving and Python Programming					✓				
		Engineering Graphics		✓	✓				✓		
		Problem Solving and Python Programming Laboratory			✓		✓				
		Physics and Chemistry Laboratory			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 2	Technical English							✓		
		Engineering Mathematics II	✓	✓	✓				✓		✓
		Materials Science				✓				✓	
		Basic Electrical, Electronics and Instrumentation Engineering				✓				✓	
		Environmental Science and Engineering				✓					
		Engineering Mechanics	✓	✓					✓	✓	✓
		Engineering Practices Laboratory			✓						
		Basic Electrical, Electronics and Instrumentation Engineering			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 2	SEM 3	Transforms and Partial Differential Equations	✓	✓	✓					✓	✓
		Engineering Thermodynamics	✓	✓	✓				✓	✓	
		Fluid Mechanics and Machinery	✓	✓	✓						
		Manufacturing Technology - I			✓	✓	✓	✓		✓	✓
		Electrical Drives and Controls									
		Manufacturing Technology Laboratory - I			✓	✓	✓	✓		✓	✓
		Computer Aided Machine Drawing			✓	✓	✓	✓		✓	✓
		Electrical Engineering Laboratory			✓						
		Interpersonal Skills / Listening & Speaking			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 4	Statistics and Numerical Methods	✓	✓							
		Kinematics of Machinery	✓	✓	✓		✓				
		Manufacturing Technology– II	✓		✓	✓	✓			✓	✓
		Engineering Metallurgy							✓		

		Strength of Materials for Mechanical Engineers	✓	✓	✓	✓					
		Thermal Engineering- I	✓	✓			✓				
		Manufacturing Technology Laboratory–II			✓						
		Strength of Materials and Fluid Mechanics Machinery Laboratory			✓						
		Advanced Reading and Writing						✓			✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 3	**SEM 5**	Thermal Engineering- II	✓	✓			✓			✓	
		Design of Machine Elements		✓		✓			✓	✓	✓
		Metrology and Measurements	✓		✓	✓			✓	✓	
		Dynamics of Machines	✓	✓	✓		✓		✓		✓
		Kinematics and Dynamics Laboratory	✓	✓	✓	✓					
		Thermal Engineering Laboratory	✓	✓	✓						
		Metrology and Measurements Laboratory	✓	✓	✓	✓			✓		
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 6	Design of Transmission Systems		✓		✓			✓		✓
		Computer Aided Design and Manufacturing		✓	✓		✓				
		Heat and Mass Transfer	✓	✓	✓	✓				✓	✓
		Finite Element Analysis	✓	✓		✓					✓
		Hydraulics and Pneumatics	✓	✓		✓				✓	
		C.A.D. / C.A.M. Laboratory		✓	✓			✓			
		Design and Fabrication Project						✓	✓		✓
		Professional Communication				✓	✓	✓	✓		✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 4	**SEM 7**	Power Plant Engineering	✓	✓	✓	✓				✓	
		Mechatronics	✓	✓	✓		✓			✓	✓
		Process Planning and Cost Estimation		✓		✓					
		Simulation and Analysis Laboratory	✓				✓		✓		
		Mechatronics Laboratory	✓	✓	✓		✓			✓	✓
		Technical Seminar						✓			
	SEM 8	Project Work	✓	✓	✓			✓	✓		
		Principles of Management						✓			✓

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHANICAL ENGINEERING
REGULATIONS - 2017
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8251	Materials Science	BS	3	3	0	0	3
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
6.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
			TOTAL	**30**	**20**	**2**	**8**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
2.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
3.	CE8394	Fluid Mechanics and Machinery	ES	4	4	0	0	4
4.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
5.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
PRACTICAL								
6.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
7.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
8.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills / Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**33**	**17**	**2**	**14**	**25**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4
2.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
3.	ME8451	Manufacturing Technology – II	PC	3	3	0	0	3
4.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
5.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
6.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
PRACTICAL								
7.	ME8462	Manufacturing Technology Laboratory – II	PC	4	0	0	4	2
8.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
2.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
3.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
4.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
5.		Open Elective I	OE	3	3	0	0	3
PRACTICAL								
6.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
7.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
8.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
			TOTAL	**28**	**16**	**0**	**12**	**22**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
2.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
3.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
4.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
5.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
6.		Professional Elective - I	PE	3	3	0	0	3
PRACTICAL								
7.	ME8681	CAD / CAM Laboratory	PC	4	0	0	4	2
8.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**2**	**10**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
2.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
3.	ME8791	Mechatronics	PC	3	3	0	0	3
4.		Open Elective - II	OE	3	3	0	0	3
5.		Professional Elective – II	PE	3	3	0	0	3
6.		Professional Elective – III	PE	3	3	0	0	3
PRACTICAL								
7.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
8.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2
9.	ME8712	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**28**	**18**	**0**	**10**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.		Professional Elective– IV	PE	3	3	0	0	3
PRACTICAL								
3.	ME8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**29**	**9**	**0**	**20**	**16**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 184

HUMANITIES AND SOCIAL SCIENCES (HS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

BASIC SCIENCE (BS)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics - I	BS	5	3	2	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8251	Materials Science	BS	3	3	0	0	3
7.	MA8353	Transforms and Partial Differential Equations	BS	4	4	0	0	4
8.	MA8452	Statistics and Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	ES	3	3	0	0	3
5.	GE8292	Engineering Mechanics	ES	5	3	2	0	4
6.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
7.	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	ES	4	0	0	4	2
8.	CE8394	Fluid Mechanics and Machinery	ES	5	3	2	0	4
9.	EE8353	Electrical Drives and Controls	ES	3	3	0	0	3
10.	EE8361	Electrical Engineering Laboratory	ES	4	0	0	4	2
11.	CE8395	Strength of Materials for Mechanical Engineers	ES	3	3	0	0	3
12.	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8391	Engineering Thermodynamics	PC	5	3	2	0	4
2.	ME8351	Manufacturing Technology - I	PC	3	3	0	0	3
3.	ME8361	Manufacturing Technology Laboratory - I	PC	4	0	0	4	2
4.	ME8381	Computer Aided Machine Drawing	PC	4	0	0	4	2
5.	ME8492	Kinematics of Machinery	PC	3	3	0	0	3
6.	ME8451	Manufacturing Technology– II	PC	3	3	0	0	3
7.	ME8491	Engineering Metallurgy	PC	3	3	0	0	3
8.	ME8493	Thermal Engineering- I	PC	3	3	0	0	3
9.	ME8462	Manufacturing Technology Laboratory–II	PC	4	0	0	4	2
10.	ME8595	Thermal Engineering- II	PC	3	3	0	0	3
11.	ME8593	Design of Machine Elements	PC	3	3	0	0	3
12.	ME8501	Metrology and Measurements	PC	3	3	0	0	3
13.	ME8594	Dynamics of Machines	PC	4	4	0	0	4
14.	ME8511	Kinematics and Dynamics Laboratory	PC	4	0	0	4	2
15.	ME8512	Thermal Engineering Laboratory	PC	4	0	0	4	2
16.	ME8513	Metrology and Measurements Laboratory	PC	4	0	0	4	2
17.	ME8651	Design of Transmission Systems	PC	3	3	0	0	3
18.	ME8691	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
19.	ME8693	Heat and Mass Transfer	PC	5	3	2	0	4
20.	ME8692	Finite Element Analysis	PC	3	3	0	0	3
21.	ME8694	Hydraulics and Pneumatics	PC	3	3	0	0	3
22.	ME8681	C.A.D. / C.A.M. Laboratory	PC	4	0	0	4	2
23.	ME8682	Design and Fabrication Project	PC	4	0	0	4	2
24.	ME8792	Power Plant Engineering	PC	3	3	0	0	3
25.	ME8791	Mechatronics	PC	3	3	0	0	3
26.	ME8793	Process Planning and Cost Estimation	PC	3	3	0	0	3
27.	ME8711	Simulation and Analysis Laboratory	PC	4	0	0	4	2
28.	ME8781	Mechatronics Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES FOR B.E. MECHANICAL ENGINEERING

SEMESTER VI, ELECTIVE I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8091	Automobile Engineering	PE	3	3	0	0	3
2.	PR8592	Welding Technology	PE	3	3	0	0	3
3.	ME8096	Gas Dynamics and Jet Propulsion	PE	3	3	0	0	3
4.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3
5.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8071	Refrigeration and Air conditioning	PE	3	3	0	0	3
2.	ME8072	Renewable Sources of Energy	PE	3	3	0	0	3
3.	ME8098	Quality Control and Reliability Engineering	PE	3	3	0	0	3
4.	ME8073	Unconventional Machining Processes	PE	3	3	0	0	3
5.	MG8491	Operations Research	PE	3	3	0	0	3
6.	MF8071	Additive Manufacturing	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII, ELECTIVE III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	ME8099	Robotics	PE	3	3	0	0	3
2.	ME8095	Design of Jigs, Fixtures and Press Tools	PE	3	3	0	0	3
3.	ME8093	Computational Fluid Dynamics	PE	3	3	0	0	3
4.	ME8097	Non Destructive Testing and Evaluation	PE	3	3	0	0	3
5.	ME8092	Composite Materials and Mechanics	PE	3	3	0	0	3
6.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
7.	GE8074	Human Rights	PE	3	3	0	0	3
8.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII, ELECTIVE IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IE8693	Production Planning and Control	PE	3	3	0	0	3
2.	MG8091	Entrepreneurship Development	PE	3	3	0	0	3
3.	ME8094	Computer Integrated Manufacturing Systems	PE	3	3	0	0	3
4.	ME8074	Vibration and Noise Control	PE	3	3	0	0	3
5.	EE8091	Micro Electro Mechanical Systems	PE	3	3	0	0	3
6.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening &	EEC	4	0	0	4	2
2.	ME8712	Technical Seminar	EEC	2	0	0	2	1
3.	ME8811	Project Work	EEC	20	0	0	20	12
4.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
5.	ME8682	Design and Fabrication Project	EEC	4	0	0	4	2
6.	HS8581	Professional Communication	EEC	2	0	0	2	1

SUMMARY

SL. NO.	SUBJECT AREA	CREDITS PER SEMESTER								CREDITS TOTAL	Percentage %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	7	-	-	-		-	3	14	7.61%
2.	BS	12	7	4	4	-	-	-	-	27	14.67%
3.	ES	9	11	9	5	-	-	-	-	33	17.80%
4.	PC	-	-	11	14	19	18	13	-	74	40.22%
5.	PE	-	-	-	-	-	3	6	3	15	8.15%
6.	OE	-	-	-	-	3	-	3		6	3.26%
7.	EEC	-	-	1	1	-	3	1	10	16	7.6%
	Total	25	25	25	24	22	24	23	16	184	
8.	Non Credit / Mandatory										

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.E. MECHANICAL ENGINEERING
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
OPEN ELECTIVES (Offered by Other Branches)

VSEMESTER
OPEN ELECTIVE-I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OAT551	Automotive Systems	OE	3	3	0	0	3
3.	OIC551	Biomedical Instrumentation	OE	3	3	0	0	3
4.	OIT552	Cloud Computing	OE	3	3	0	0	3
5.	OIT551	Database Management Systems	OE	3	3	0	0	3
6.	OAI551	Environment and Agriculture	OE	3	3	0	0	3
7.	OPT551	Fibre Reinforced Plastics	OE	3	3	0	0	3
8.	OCE552	Geographic Information System	OE	3	3	0	0	3
9.	OAT552	Internal Combustion Engines	OE	3	3	0	0	3
10.	OML551	Introduction To Nanotechnology	OE	3	3	0	0	3
11.	OIM552	Lean Manufacturing	OE	3	3	0	0	3
12.	OBM552	Medical Physics	OE	3	3	0	0	3
13.	OML552	Microscopy	OE	3	3	0	0	3
14.	OAI552	Participatory Water Resources Management	OE	3	3	0	0	3
15.	OCH552	Principles of Chemical Engineering	OE	3	3	0	0	3
16.	OBT554	Principles of Food Preservation	OE	3	3	0	0	3
17.	OMF551	Product Design and Development	OE	3	3	0	0	3
18.	OAI553	Production Technology of Agricultural machinery	OE	3	3	0	0	3
19.	ORO551	Renewable Energy Sources	OE	3	3	0	0	3
20.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
21.	OIC552	State Variable Analysis and Design	OE	3	3	0	0	3
22.	OTL553	Telecommunication Network Management	OE	3	3	0	0	3
23.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

VII SEMESTER

OPEN ELECTIVE - II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OEE751	Basic Circuit Theory	OE	3	3	0	0	3
3.	OGI751	Climate Change and its Impact	OE	3	3	0	0	3
4.	OCS751	Data Structures and Algorithms	OE	3	3	0	0	3
5.	OML752	Electronic Materials	OE	3	3	0	0	3
6.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
7.	OAE751	Fundamentals of Combustion	OE	3	3	0	0	3
8.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
9.	OEN751	Green Building Design	OE	3	3	0	0	3
10.	OAI752	Integrated Water Resources Management	OE	3	3	0	0	3
11.	OEI 751	Introduction to Embedded Systems	OE	3	3	0	0	3
12.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
13.	OAN751	Low Cost Automation	OE	3	3	0	0	3
14.	OMT751	MEMS and NEMS	OE	3	3	0	0	3
15.	ORO751	Nano Computing	OE	3	3	0	0	3
16.	OAE752	Principles of Flight Mechanics	OE	3	3	0	0	3
17.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
18.	OAT751	Production of Automotive Components	OE	3	3	0	0	3
19.	OIE751	Robotics	OE	3	3	0	0	3
20.	OML753	Selection of Materials	OE	3	3	0	0	3
21.	OML751	Testing of Materials	OE	3	3	0	0	3
22.	OAT752	Vehicle Styling and Design	OE	3	3	0	0	3
23.	OTT751	Weaving Mechanisms	OE	3	3	0	0	3
24.	OMV751	Marine Vehicles	OE	3	3	0	0	3

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
B.TECH INFORMATION TECHNOLOGY
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1. To ensure graduates will be proficient in utilizing the fundamental knowledge of basic sciences, mathematics and Information Technology for the applications relevant to various streams of Engineering and Technology.

2. To enrich graduates with the core competencies necessary for applying knowledge of computers and telecommunications equipment to store, retrieve, transmit, manipulate and analyze data in the context of business enterprise.

3. To enable graduates to think logically, pursue lifelong learning and will have the capacity to understand technical issues related to computing systems and to design optimal solutions.

4. To enable graduates to develop hardware and software systems by understanding the importance of social, business and environmental needs in the human context.

5. To enable graduates to gain employment in organizations and establish themselves as professionals by applying their technical skills to solve real world problems and meet the diversified needs of industry, academia and research.

PROGRAM OUTCOMES (POs)

ENGINEERING GRADUATES WILL BE ABLE TO:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

1. To create, select, and apply appropriate techniques, resources, modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

2. To manage complex IT projects with consideration of the human, financial, ethical and environmental factors and an understanding of risk management processes, and operational and policy implications.

MAPPING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH PROGRAMME OUTCOMES

A broad relation between the programme objective and the outcomes is given in the following table

PROGRAMME EDUCATIONAL OBJECTIVES	PROGRAMME OUTCOMES											
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
1	3	2										
2	3	3	1	1								2
3			3			1						3
4			3		1	2	3	1				
5				3				1	1	2	2	1

MAPPING OF PROGRAM SPECIFIC OBJECTIVES WITH PROGRAMME OUTCOMES

A broad relation between the Program Specific Objectives and the outcomes is given in the following table

PROGRAM SPECIFIC OBJECTIVES	PROGRAMME OUTCOMES											
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
1	3	2			3				2	2		
2				3			3	3			**3**	

Contribution 1: Reasonable 2:Significant 3:Strong

SEMESTER I

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Communicative English									3	3	2	2
2.	Engineering Mathematics I	3	3	3						2			2
3.	Engineering Physics	3	3	3				2					1
4.	Engineering Chemistry	3	2	2				3					1
5.	Problem Solving and Python Programming	3	2	2		3							2
6.	Engineering Graphics	3	3				2						2
7.	Problem Solving and Python Programming Laboratory	3	3	3		3							2
8.	Physics and Chemistry Laboratory	3	3										

SEMESTER II													
S.No	**COURSE TITLE**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
1.	Technical English									3	3	2	2
2.	Engineering Mathematics II	3	3	3						2			2
3.	Physics for Information Science	3	3	2				2					2
4.	Basic Electrical, Electronics and Measurement Engineering	3	2										
5.	Information Technology Essentials	3	3	3		3					2	1	2
6.	Programming in C	3	3	3		2							2
7.	Engineering Practices Laboratory	3	3				3						1
8.	C Programming Laboratory	3	3	3		3							2
9.	Information Technology Essentials Laboratory	3	3	3		3					2	2	2

SEMESTER III

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Discrete Mathematics	3	3	2									1
2.	Digital Principles and System Design	3	3	3									
3.	Data Structures	3	3	3									
4.	Object Oriented Programming	2	2	3		3							
5.	Analog and Digital Communication	3	3	2									
6.	Data Structures Laboratory	3	3	3		2							
7.	Object Oriented Programming Laboratory	3	2	3		3							
8.	Digital Systems Laboratory	3	3	3		2							
9.	Interpersonal Skills/Listening & Speaking									3	3	1	2

SEMESTER IV

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Probability and Statistics	3	3	3									
2.	Computer Architecture	3	2	3									
3.	Database Management Systems	3	2	3									
4.	Design and Analysis of Algorithms	3	3	2	2								
5.	Operating Systems	3	1	3									
6.	Environmental Science and Engineering							3					
7.	Database Management Systems Laboratory	3	2	3		2							
8.	Operating Systems Laboratory	3	1	3		2							
9.	Advanced Reading and Writing									3	3	1	2

SEMESTER V

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Algebra and Number Theory	3	3	2									
2.	Computer Networks	3	1	2									
3.	Microprocessors and Microcontrollers	3	2	3									
4.	Web Technology	3	1	1		3							
5.	Software Engineering	3	1	2							3		
6.	Microprocessors and Microcontrollers Laboratory	3	2	3		2							
7.	Networks Laboratory	3	1	2		2							
8.	Web Technology Laboratory	3	1	1		3							

SEMESTER VI

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Computational Intelligence	3	3	3	3		2						
2.	Object Oriented Analysis and Design	3	3	3	3								
3.	Mobile Communication	3	2	3									
4.	Big Data Analytics	3	3	3	3		2						
5.	Computer Graphics and Multimedia	3		3		2							
6.	Mobile Application Development Laboratory	1		2		3							
7.	Object Oriented Analysis and Design Laboratory	3	3	3	2	3							
8.	Mini Project	3	3	3	1	3	3	3					

SEMESTER VII

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Principles of Management								2	2	3	3	2
2.	Cryptography and Network Security	3	3	3	2		2						
3.	Cloud Computing	2	3	3	2		2						
4.	Open Elective II												
5.	Professional Elective II												
6.	Professional Elective III												
7.	FOSS and Cloud Computing Laboratory	2	3	3	2	3	2						
8.	Security Laboratory	3	3	3	2		3						

SEMESTER VIII

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Professional Elective IV												
2.	Professional Elective V												
3.	Project Work	3	3	3	3	3	2	2	1	3	3	3	2

PROFESSIONAL ELECTIVES (PE)
SEMESTER VI
ELECTIVE - I

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Software Testing	2	2		3								
2.	Graph Theory and Applications	3	3	2	3								
3.	Digital Signal Processing	3	3	3	3		2	2					
4.	Information Storage and Management	3	3										
5.	Agile Methodologies	3				3				3	3	3	
6.	Embedded Systems	2	2	3			2	3					
7.	Intellectual Property Rights								3		3	3	
8.													

ELECTIVE - II

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Web Development Frameworks	2		3		3							
2.	Machine Learning Techniques	3	3	3	2		2						
3.	Formal Languages and Automata Theory	3	3	3	3		2						
4.	Internet of Things	2		2		3	3	3					
5.	Software Project Management	2	2	2						3	3	3	
6.	Service Oriented Architecture	3	3	3			2	2					
7.	Total Quality Management								3	2	3	3	3
8.													

ELECTIVE - III

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Human Computer Interaction	3	3	3	2		3						
2.	C# and .Net Programming	2		3		3							
3.	Wireless Ad hoc and Sensor Networks	3	3	3									
4.	Foundation Skills in Integrated Product Development	3	3	3	2		2	2				3	
5.	Advanced Topics on Databases	3	3	3	2								
6.	Disaster Management	2	2	2			3	3					

ELECTIVE - IV

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Social Network Analysis	3	3	3	3								
2.	Soft Computing	2	3	3	3								
3.	Cyber Forensics	3	3	3	3								
4.	Information Security	3	3	3	3								
5.	Digital Image Processing	3	3	3	3								
6.	Network Management	2	3	3	3								
7.	Professional Ethics in Engineering								3				3

ELECTIVE - V

Sl. No	COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1.	Information Retrieval Techniques	3	3	3									
2.	Green Computing	3	3	3			3	3					
3.	Natural Language Processing	3	3	3	3								
4.	Speech Processing	3	3	3	3								
5.	Web Design and Management	3		3									
6.	Electronic Commerce	3	1	1								3	3
7.	Fundamentals of Nanoscience	3	3	3									

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B.TECH INFORMATION TECHNOLOGY
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I - VIII SEMESTERS CURRICULA AND SYLLABI

SEMESTER I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	MA8151	Engineering Mathematics - I	BS	4	4	0	0	4
3.	PH8151	Engineering Physics	BS	3	3	0	0	3
4.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6.	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	HS8251	Technical English	HS	4	4	0	0	4
2.	MA8251	Engineering Mathematics - II	BS	4	4	0	0	4
3.	PH8252	Physics for Information Science	BS	3	3	0	0	3
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	IT8201	Information Technology Essentials	PC	3	3	0	0	3
6.	CS8251	Programming in C	PC	3	3	0	0	3
PRACTICALS								
7.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
9.	IT8211	Information Technology Essentials Laboratory	PC	2	0	0	2	1
			TOTAL	**30**	**20**	**0**	**10**	**25**

SEMESTER III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
2.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
3.	CS8391	Data Structures	PC	3	3	0	0	3
4.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
5.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
PRACTICALS								
6.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
7.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
8.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2
9.	HS8381	Interpersonal Skills/Listening & Speaking	EEC	2	0	0	2	1
			TOTAL	**31**	**17**	**0**	**14**	**24**

SEMESTER IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8391	Probability and Statistics	BS	4	4	0	0	4
2.	CS8491	Computer Architecture	PC	3	3	0	0	3
3.	CS8492	Database Management Systems	PC	3	3	0	0	3
4.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
5.	CS8493	Operating Systems	PC	3	3	0	0	3
6.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
PRACTICALS								
7.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
8.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
9.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**29**	**19**	**0**	**10**	**24**

SEMESTER V

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4
2.	CS8591	Computer Networks	PC	3	3	0	0	3
3.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4.	IT8501	Web Technology	PC	3	3	0	0	3
5.	CS8494	Software Engineering	PC	3	3	0	0	3
6.		Open Elective I	OE	3	3	0	0	3
PRACTICALS								
7.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
8.	CS8581	Networks Laboratory	PC	4	0	0	4	2
9.	IT8511	Web Technology Laboratory	PC	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER VI

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	IT8601	Computational Intelligence	PC	3	3	0	0	3
2.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
3.	IT8602	Mobile Communication	PC	3	3	0	0	3
4.	CS8091	Big Data Analytics	PC	3	3	0	0	3
5.	CS8092	Computer Graphics and Multimedia	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
PRACTICALS								
7.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2
8.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
9.	IT8611	Mini Project	EEC	2	0	0	2	1
10.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**30**	**18**	**0**	**12**	**24**

SEMESTER VII

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	MG8591	Principles of Management	HS	3	3	0	0	3
2.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
3.	CS8791	Cloud Computing	PC	3	3	0	0	3
4.		Open Elective II	OE	3	3	0	0	3
5.		Professional Elective II	PE	3	3	0	0	3
6.		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
			TOTAL	**26**	**18**	**0**	**8**	**22**

SEMESTER VIII

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.		Professional Elective IV	PE	3	3	0	0	3
2.		Professional Elective V	PE	3	3	0	0	3
PRACTICALS								
3.	IT8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL NO. OF CREDITS: 185

HUMANITIES AND SOCIAL SCIENCES (HS)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
4.	MG8591	Principles of Management	HS	3	3	0	0	3

BASIC SCIENCES (BS)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	MA8251	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8252	Physics for Information Science	BS	3	3	0	0	3
7.	MA8351	Discrete Mathematics	BS	4	4	0	0	4
8.	MA8391	Probability and Statistics	BS	4	4	0	0	4
9.	MA8551	Algebra and Number Theory	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8255	Basic Electrical, Electronics and Measurement Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	CS8351	Digital Principles and System Design	ES	4	4	0	0	4
7.	CS8382	Digital Systems Laboratory	ES	4	0	0	4	2

PROFESSIONAL CORE (PC)

Sl. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8201	Information Technology Essentials	PC	3	3	0	0	3
2.	IT8211	Information Technology Essentials Laboratory	PC	2	0	0	2	1
3.	CS8251	Programming in C	PC	3	3	0	0	3
4.	CS8261	C Programming Laboratory	PC	4	0	0	4	2
5.	CS8391	Data Structures	PC	3	3	0	0	3
6.	CS8392	Object Oriented Programming	PC	3	3	0	0	3
7.	EC8394	Analog and Digital Communication	PC	3	3	0	0	3
8.	CS8381	Data Structures Laboratory	PC	4	0	0	4	2
9.	CS8383	Object Oriented Programming Laboratory	PC	4	0	0	4	2
10.	CS8491	Computer Architecture	PC	3	3	0	0	3
11.	CS8492	Database Management Systems	PC	3	3	0	0	3
12.	CS8451	Design and Analysis of Algorithms	PC	3	3	0	0	3
13.	CS8493	Operating Systems	PC	3	3	0	0	3
14.	CS8481	Database Management Systems Laboratory	PC	4	0	0	4	2
15.	CS8461	Operating Systems Laboratory	PC	4	0	0	4	2
16.	CS8591	Computer Networks	PC	3	3	0	0	3
17.	EC8691	Microprocessors and Microcontrollers	PC	3	3	0	0	3
18.	IT8501	Web Technology	PC	3	3	0	0	3
19.	CS8494	Software Engineering	PC	3	3	0	0	3
20.	EC8681	Microprocessors and Microcontrollers Laboratory	PC	4	0	0	4	2
21.	CS8581	Networks Laboratory	PC	4	0	0	4	2
22.	IT8511	Web Technology Laboratory	PC	4	0	0	4	2
23.	IT8601	Computational Intelligence	PC	3	3	0	0	3
24.	CS8592	Object Oriented Analysis and Design	PC	3	3	0	0	3
25.	IT8602	Mobile Communication	PC	3	3	0	0	3
26.	CS8091	Big Data Analytics	PC	3	3	0	0	3
27.	CS8092	Computer Graphics and Multimedia	PC	3	3	0	0	3
28.	CS8662	Mobile Application Development Laboratory	PC	4	0	0	4	2

29.	CS8582	Object Oriented Analysis and Design Laboratory	PC	4	0	0	4	2
30.	CS8792	Cryptography and Network Security	PC	3	3	0	0	3
31.	CS8791	Cloud Computing	PC	3	3	0	0	3
32.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
33.	IT8761	Security Laboratory	PC	4	0	0	4	2

PROFESSIONAL ELECTIVES (PE)
SEMESTER VI
ELECTIVE - I

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8076	Software Testing	PE	3	3	0	0	3
2.	CS8077	Graph Theory and Applications	PE	3	3	0	0	3
3.	IT8071	Digital Signal Processing	PE	3	3	0	0	3
4.	IT8001	Information Storage and Management	PE	3	3	0	0	3
5.	CS8072	Agile Methodologies	PE	3	3	0	0	3
6.	IT8072	Embedded Systems	PE	3	3	0	0	3
7.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - II

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	IT8002	Web Development Frameworks	PE	3	3	0	0	3
2.	CS8082	Machine Learning Techniques	PE	3	3	0	0	3
3.	IT8003	Formal Languages and Automata Theory	PE	3	3	0	0	3
4.	CS8081	Internet of Things	PE	3	3	0	0	3
5.	IT8075	Software Project Management	PE	3	3	0	0	3
6.	IT8074	Service Oriented Architecture	PE	3	3	0	0	3
7.	GE8077	Total Quality Management	PE	3	3	0	0	3

SEMESTER VII
ELECTIVE - III

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8079	Human Computer Interaction	PE	3	3	0	0	3
2.	CS8073	C# and .Net Programming	PE	3	3	0	0	3
3.	CS8088	Wireless Adhoc and Sensor Networks	PE	3	3	0	0	3
4.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
5.	CS8071	Advanced Topics on Databases	PE	3	3	0	0	3
6.	GE8074	Human Rights	PE	3	3	0	0	3
7.	GE8071	Disaster Management	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - IV

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8085	Social Network Analysis	PE	3	3	0	0	3
2.	CS8086	Soft Computing	PE	3	3	0	0	3
3.	CS8074	Cyber Forensics	PE	3	3	0	0	3
4.	IT8073	Information Security	PE	3	3	0	0	3
5.	EC8093	Digital Image Processing	PE	3	3	0	0	3
6.	IT8004	Network Management	PE	3	3	0	0	3
7.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

SEMESTER VIII
ELECTIVE - V

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	CS8080	Information Retrieval Techniques	PE	3	3	0	0	3
2.	CS8078	Green Computing	PE	3	3	0	0	3
3.	CS8084	Natural Language Processing	PE	3	3	0	0	3
4.	IT8077	Speech Processing	PE	3	3	0	0	3
5.	IT8078	Web Design and Management	PE	3	3	0	0	3
6.	IT8005	Electronic Commerce	PE	3	3	0	0	3
7.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

***Professional Electives are grouped according to elective number as was done previously.**

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Sl.NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/ Listening & Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	IT8611	Mini Project	EEC	2	0	0	2	1
4.	HS8581	Professional Communication	EEC	2	0	0	2	1
5.	IT8811	Project Work	EEC	20	0	0	20	10

SUMMARY

S.NO.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	4		3			3		14	8.6%
2.	BS	12	7	4	4	4				31	16.84%
3.	ES	9	5	6						20	11.41%
4.	PC		9	13	16	18	19	10		85	45.56%
5.	PE					3	3	6	6	18	8.15%
6.	OE							3		3	3.26%
7.	EEC			1	1		2		10	14	7.0%
	Total	25	25	24	24	25	24	22	16	185	
8.	Non Credit / Mandatory										

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OPEN ELECTIVES
(Offered by Other Branches)

SEMESTER V

OPEN ELECTIVE - I

SL NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OMD551	Basic of Biomedical Instrumentation	OE	3	3	0	0	3
3.	OBT552	Basics of Bioinformatics	OE	3	3	0	0	3
4.	OBM551	Bio Chemistry	OE	3	3	0	0	3
5.	OTL552	Digital Audio Engineering	OE	3	3	0	0	3
6.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
7.	OBT553	Fundamentals of Nutrition	OE	3	3	0	0	3
8.	OCE552	Geographic Information System	OE	3	3	0	0	3
9.	OPY551	Herbal Technology	OE	3	3	0	0	3
10.	OMD552	Hospital Waste Management	OE	3	3	0	0	3
11.	OCH551	Industrial Nanotechnology	OE	3	3	0	0	3
12.	OBT551	Introduction to Bioenergy and Biofuels	OE	3	3	0	0	3
13.	OME553	Industrial Safety Engineering	OE	3	3	0	0	3
14.	OEI551	Logic and Distributed Control Systems	OE	3	3	0	0	3
15.	OBM552	Medical Physics	OE	3	3	0	0	3
16.	OML552	Microscopy	OE	3	3	0	0	3
17.	OBT554	Principles of Food Preservation	OE	3	3	0	0	3
18.	OMF551	Product Design and Development	OE	3	3	0	0	3
19.	OAN551	Sensors and Transducers	OE	3	3	0	0	3
20.	OTL551	Space Time Wireless Communication	OE	3	3	0	0	3
21.	OEC552	Soft Computing	OE	3	3	0	0	3
22.	OTL553	Telecommunication Network Management	OE	3	3	0	0	3
23.	OMD553	Telehealth Technology	OE	3	3	0	0	3
24.	OTL554	Wavelets and its Applications	OE	3	3	0	0	3
25.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

SEMESTER VII

OPEN ELECTIVE - II

SL NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	OAI751	Agricultural Finance, Banking and Co-operation	OE	3	3	0	0	3
2.	OEE751	Basic Circuit Theory	OE	3	3	0	0	3
3.	OBM751	Basics of Human Anatomy and Physiology	OE	3	3	0	0	3
4.	OGI751	Climate Change and its Impact	OE	3	3	0	0	3
5.	OPY751	Clinical Trials	OE	3	3	0	0	3
6.	OEC751	Electronic Devices	OE	3	3	0	0	3
7.	OML752	Electronic Materials	OE	3	3	0	0	3
8.	OCH752	Energy Technology	OE	3	3	0	0	3
9.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
10.	OGI752	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3
11.	OEN751	Green Building Design	OE	3	3	0	0	3
12.	OBM752	Hospital Management	OE	3	3	0	0	3
13.	OEE752	Introduction to Renewable Energy Systems	OE	3	3	0	0	3
14.	OBT753	Introduction of Cell Biology	OE	3	3	0	0	3
15.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
16.	OAN751	Low Cost Automation	OE	3	3	0	0	3
17.	OEC754	Medical Electronics	OE	3	3	0	0	3
18.	OEC756	MEMS and NEMS	OE	3	3	0	0	3
19.	OBT752	Microbiology	OE	3	3	0	0	3
20.	OCH751	Process Modeling and Simulation	OE	3	3	0	0	3
21.	OIE751	Robotics	OE	3	3	0	0	3
22.	OEC753	Signals and Systems	OE	4	4	0	0	4
23.	OME752	Supply Chain Management	OE	3	3	0	0	3
24.	OME753	Systems Engineering	OE	3	3	0	0	3
25.	OTL751	Telecommunication System Modeling and Simulation	OE	3	3	0	0	3
26.	OCY751	Waste Water Treatment	OE	3	3	0	0	3

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B. TECH. TEXTILE TECHNOLOGY
CHOICE BASED CREDIT SYSTEM

1. Programme Educational Objectives (PEOs)

Bachelor of Textile Technology curriculum is designed to prepare the graduates having attitude and knowledge to

(a) Have powerful base to pursue a successful professional and technical career

(b) Have strong foundation in basic sciences, mathematics, engineering and experimentation skills to comprehend the manufacturing processes and provide practical and innovative solutions.

(c) Have knowledge on the theory and practices in the field of textile technology and allied areas to manage textile industry and provide techno-economic solutions to the problems.

(d) Engross in life-long learning to keep abreast with emerging technology

(e) Practice and inspire high ethical values and maintain high technical standards

2. Programme Outcome (POs)

1. Ability to apply knowledge of mathematics, science and engineering in textile production processes and product design.
2. Ability to apply knowledge on fiber, yarn, fabric manufacture, chemical processing and testing of textiles in the field of textile manufacture.
3. Ability to apply the knowledge on theory of yarn structure, fabric structure and design concepts on product development
4. Ability to identify and solve technological problems in textile industry
5. Ability to analyze and apply knowledge in the field of design and production of textile products using computational platforms and software tools.
6. Commitment to implement the professional and ethical values.
7. Use the techniques, skills, and modern tools necessary for practicing in the textile industry.
8. Ability to communicate effectively and work in interdisciplinary groups.
9. Ability to review, comprehend and report technological development.

3. PEOs / POs Mapping

PEOs	POs								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
a	√	√	√	√	√			√	
b	√				√	√	√		√
c		√	√	√	√		√		√
d				√	√		√	√	√
e						√		√	√

4. Semester Course wise POs Mapping

		Course Title	1	2	3	4	5	6	7	8	9
YEAR I	SEMESTER I	Communication English						√		√	√
		Engineering Mathematics I	√			√	√		√		√
		Engineering Physics	√			√					
		Engineering Chemistry	√	√		√					
		Problem Solving and Python Programming	√				√		√		√
		Engineering Graphics	√		√		√		√		√
		Problem Solving and Python Programming Laboratory					√		√		√
		Physics and Chemistry Laboratory	√	√		√					
	SEMESTER II	Technical English						√		√	√
		Engineering Mathematics II	√				√		√		√
		Physics of Materials	√	√	√						√
		Chemistry for Technologists		√	√	√					
		Basics of Electrical and Electronics Engineering	√		√				√		√
		Basics of Textile Technology		√	√	√					
		Engineering Practices Laboratory	√		√	√			√		
		Applied Chemistry Laboratory	√	√		√					
YEAR II	SEMESTER III	Probability and Statistics	√				√		√		√
		Engineering Mechanics for Textile Technologists	√			√			√		√
		Technology of Pre Weaving Process		√	√	√			√		
		Characteristics of Textile Fibres		√		√					
		Technology of Pre Spinning Process		√	√	√			√		
		Fibre Science Laboratory		√	√						
		Yarn Manufacture Laboratory I		√	√	√			√		
		Basic Electrical and Electronics Engineering Laboratory	√		√				√		
		Interpersonal Skills/Listening and Speaking						√		√	√
	SEMESTER	Numerical Methods	√				√				
		Solid Mechanics for Textile Technologists	√	√		√					
		Production of Manufactured Fibre		√	√	√					
		Technology of Yarn Spinning		√	√	√			√		
		Woven Fabric Manufacture		√	√	√			√		

	IV	Knitting Technology		√	√	√			√		
		Yarn Manufacture Laboratory II		√	√	√			√		
		Fabric Manufacture Laboratory		√	√	√			√		
		Advanced Reading and Writing						√		√	√
YEAR III	SEMESTER V	Environmental Science and Engineering	√	√				√			
		Process Control in Spinning		√	√	√			√		
		Chemical Processing of Textile Material I		√		√			√		
		Quality Evaluation of Fibres and Yarns		√	√	√					
		Woven Fabric Structures		√	√	√					
		Professional Communication									
		Fabric Analysis Laboratory		√	√	√					
	SEMESTER VI	Garment Manufacturing Technology			√	√			√		
		Chemical Processing of Textile Material II		√		√			√		
		Mechanics of Textile Machinery	√	√	√	√	√		√		
		Fabric and Garment Quality Evaluation		√	√	√					
		Textile Chemical Processing Laboratory		√		√			√		
		Knitting and Garment Construction Laboratory		√	√	√					
		Textile Quality Evaluation Laboratory		√	√	√					
YEAR IV	SEMESTER VII	Financial Management in Textile Industry						√	√	√	√
		Operations Research in Textile Industry				√	√		√		
		Technical Textiles		√	√	√			√		√
		Internship						√	√	√	√
	SEMESTER VIII	Bonded fabrics		√	√	√			√		
		Project work		√	√	√		√	√	√	√

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B. TECH. TEXTILE TECHNOLOGY
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS (FULL TIME) CURRICULA AND SYLLABI

SEMESTER I

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8151	Communicative English	HS	4	4	0	0	4
2	MA8151	Engineering Mathematics- I	BS	4	4	0	0	4
3	PH8151	Engineering Physics	BS	3	3	0	0	3
4	CY8151	Engineering Chemistry	BS	3	3	0	0	3
5	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
6	GE8152	Engineering Graphics	ES	6	2	0	4	4
PRACTICALS								
7	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
8	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

SEMESTER II

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	HS8251	Technical English	HS	4	4	0	0	4
2	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
3	PH8254	Physics of Materials	BS	3	3	0	0	3
4	CY8292	Chemistry for Technologists	BS	3	3	0	0	3
5	BE8251	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3
6	TT8251	Basics of Textile Technology	PC	3	3	0	0	3
PRACTICALS								
7	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
8	CY8261	Applied Chemistry Laboratory	BS	4	0	0	4	2
			TOTAL	**28**	**20**	**0**	**8**	**24**

SEMESTER III

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	MA8391	Probability and Statistics	BS	4	4	0	0	4
2	TT8391	Engineering Mechanics for Textile Technologists	ES	5	3	2	0	4
3	TT8353	Technology of Pre Weaving Process	PC	3	3	0	0	3
4	TT8351	Characteristics of Textile Fibres	PC	4	4	0	0	4
5	TT8352	Technology of Pre Spinning Process	PC	3	3	0	0	3
PRACTICALS								
6	TT8361	Fibre Science Laboratory	PC	2	0	0	2	1
7	TT8311	Yarn Manufacture Laboratory I	PC	4	0	0	4	2
8	EE8362	Basic Electrical and Electronics Engineering Laboratory	ES	4	0	0	4	2
9	HS8381	Interpersonal Skills/Listening and Speaking	EEC	2	0	0	2	1
			TOTAL	**31**	**17**	**2**	**12**	**24**

SEMESTER IV

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	MA8491	Numerical Methods	BS	4	4	0	0	4
2	TT8452	Solid Mechanics for Textile Technologists	ES	3	3	0	0	3
3	TT8451	Production of Manufactured Fibre	PC	3	3	0	0	3
4	TT8453	Technology of Yarn Spinning	PC	3	3	0	0	3
5	TT8454	Woven Fabric Manufacture	PC	4	4	0	0	4
6	TT8491	Knitting Technology	PC	3	3	0	0	3
PRACTICALS								
7	TT8411	Yarn Manufacture Laboratory II	PC	4	0	0	4	2
8	TT8461	Fabric Manufacture Laboratory	PC	4	0	0	4	2
9	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
			TOTAL	**30**	**20**	**0**	**10**	**25**

Note: Internship for a duration of two weeks during the Semester summer vacation should be undergone by the students for which assessment will be done during VII semester.

SEMESTER V

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3
2.	TT8501	Process Control in Spinning	PC	3	3	0	0	3
3.	TT8551	Chemical Processing of Textile Materials I	PC	3	3	0	0	3
4.	TT8552	Quality Evaluation of Fibres and Yarns	PC	3	3	0	0	3
5.	TT8591	Woven Fabric Structures	PC	3	3	0	0	3
6.		Professional Elective I	PE	3	3	0	0	3
7.		Open Elective I*	OE	3	3	0	0	3
PRACTICALS								
8.	TT8561	Fabric Analysis Laboratory	PC	4	0	0	4	2
9.	HS8581	Professional Communication	EEC	2	0	0	2	1
			TOTAL	**27**	**21**	**0**	**6**	**24**

* - Course from the curriculum of the other UG Programmes

SEMESTER VI

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	TT8653	Garment Manufacturing Technology	PC	4	4	0	0	4
2	TT8651	Chemical Processing of Textile Materials II	PC	3	3	0	0	3
3	TT8654	Mechanics of Textile Machinery	PC	3	3	0	0	3
4	TT8652	Fabric and Garment Quality Evaluation	PC	3	3	0	0	3
5		Professional Elective II	PE	3	3	0	0	3
6		Professional Elective III	PE	3	3	0	0	3
PRACTICALS								
7	TT8681	Textile Chemical Processing Laboratory	PC	4	0	0	4	2
8	TT8611	Knitting and Garment Construction Laboratory	PC	4	0	0	4	2
9	FT8661	Textile Quality Evaluation Laboratory	PC	4	0	0	4	2
			TOTAL	**31**	**19**	**0**	**12**	**25**

Note: Internship for a duration of four weeks during the Semester summer vacation should be undergone by the students for which assessment will be done during VII semester.

SEMESTER VII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	TT8751	Financial Management in Textile Industry	PC	3	3	0	0	3
2.	TT8791	Operations Research in Textile Industry	PC	3	3	0	0	3
3.	TT8792	Technical Textiles	PC	3	3	0	0	3
4.		Professional Elective IV	PE	3	3	0	0	3
5.		Professional Elective V	PE	3	3	0	0	3
6.		Open Elective II*	OE	3	3	0	0	3
PRACTICALS								
7.	TT8711	Internship**	EEC	0	0	0	0	2
			TOTAL	**18**	**18**	**0**	**0**	**20**

* - Course from the curriculum of the other UG Programmes

** - vide IV semester and VI semester

SEMESTER VIII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	TT8851	Bonded Fabrics	PC	3	3	0	0	3
2		Professional Elective VI	PE	3	3	0	0	3
PRACTICALS								
3	TT8811	Project Work	EEC	20	0	0	20	10
			TOTAL	**26**	**6**	**0**	**20**	**16**

TOTAL CREDITS: 183

LIST OF PROFESSIONAL ELECTIVES

PROFESSIONAL ELECTIVE I, SEMESTER V

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8001	New Spinning Technologies	PE	3	3	0	0	3
2.	TT8082	Textile Structural Mechanics	PE	3	3	0	0	3
3.	TT8071	Apparel Production Machinery	PE	3	3	0	0	3
4.	TT8092	Denim Manufacturing	PE	3	3	0	0	3
5.	GE8071	Disaster Management	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE II, SEMESTER VI

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8002	Polymer Chemistry	PE	3	3	0	0	3
2.	TT8003	Pattern Engineering	PE	3	3	0	0	3
3.	TT8081	Textile EXIM Management	PE	3	3	0	0	3
4.	FT8652	Industrial Engineering in Apparel Industry	PE	3	3	0	0	3
5.	GE8075	Intellectual Property Rights	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE III, SEMESTER VI

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8075	High Performance Fibres	PE	3	3	0	0	3
2.	TT8074	Functional Finishes	PE	3	3	0	0	3
3.	TT8080	Textile costing	PE	3	3	0	0	3
4.	FT8651	Apparel Marketing and Merchandising	PE	3	3	0	0	3
5.	GE8076	Professional Ethics in Engineering	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE IV, SEMESTER VII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8073	Eco - Friendly Dyes, Chemicals and Processing	PE	3	3	0	0	3
2.	TT8078	Production and Application of Sewing Threads	PE	3	3	0	0	3
3.	TT8072	Coated Textiles	PE	3	3	0	0	3
4.	FT8072	Retail Management and Visual Merchandising	PE	3	3	0	0	3
5.	GE8074	Human Rights	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE V, SEMESTER VII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8091	Clothing Comfort	PE	3	3	0	0	3
2.	TT8077	Medical Textiles	PE	3	3	0	0	3
3.	TT8076	Home Textiles	PE	3	3	0	0	3
4.	GE8077	Total Quality Management	PE	3	3	0	0	3
5.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE VI, SEMESTER VIII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8004	Manufacture of Silk Fabrics	PE	3	3	0	0	3
2.	FT8071	Brand Management	PE	3	3	0	0	3
3.	TT8079	Protective Textiles	PE	3	3	0	0	3
4.	TT8093	Textile Reinforced Composites	PE	3	3	0	0	3
5.	MG8791	Supply Chain Management	PE	3	3	0	0	3
6.	GE8073	Fundamentals of Nanoscience	PE	3	3	0	0	3

SUBJECT AREAWISE DETAILS

HUMANITIES AND SOCIAL SCIENCES (HS)

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	HS8151	Communicative English	HS	4	4	0	0	4
2.	HS8251	Technical English	HS	4	4	0	0	4
3.	GE8291	Environmental Science and Engineering	HS	3	3	0	0	3

BASIC SCIENCES (BS)

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	MA8151	Engineering Mathematics I	BS	4	4	0	0	4
2.	PH8151	Engineering Physics	BS	3	3	0	0	3
3.	CY8151	Engineering Chemistry	BS	3	3	0	0	3
4.	BS8161	Physics and Chemistry Laboratory	BS	4	0	0	4	2
5.	MA8251	Engineering Mathematics II	BS	4	4	0	0	4
6.	PH8254	Physics of Materials	BS	3	3	0	0	3
7.	CY8292	Chemistry for Technologists	BS	3	3	0	0	3
8.	CY8261	Applied Chemistry Laboratory	BS	4	0	0	4	2
9.	MA8391	Probability and Statistics	BS	4	4	0	0	4
10.	MA8491	Numerical Methods	BS	4	4	0	0	4

ENGINEERING SCIENCES (ES)

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	GE8151	Problem Solving and Python Programming	ES	3	3	0	0	3
2.	GE8152	Engineering Graphics	ES	6	2	0	4	4
3.	GE8161	Problem Solving and Python Programming Laboratory	ES	4	0	0	4	2
4.	BE8251	Basic Electrical And Electronics Engineering	ES	3	3	0	0	3
5.	GE8261	Engineering Practices Laboratory	ES	4	0	0	4	2
6.	TT8391	Engineering Mechanics for Textile Technologists	ES	5	3	2	0	4
7.	EE8362	Basic Electrical and Electronics Engineering Laboratory	ES	4	0	0	4	2
8.	TT8452	Solid Mechanics for Textile Technologists	ES	3	3	0	0	3

PROFESSIONAL CORE (PC)

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TT8251	Basics of Textile Technology	PC	3	3	0	0	3
2.	TT8353	Technology of Pre Weaving Process	PC	3	3	0	0	3
3.	TT8351	Characteristics of Textile Fibres	PC	4	4	0	0	4
4.	TT8352	Technology of Pre Spinning Process	PC	3	3	0	0	3
5.	TT8361	Fibre Science Laboratory	PC	2	0	0	2	1
6.	TT8311	Yarn Manufacture Laboratory I	PC	4	0	0	4	2
7.	TT8451	Production of Manufactured Fibre	PC	3	3	0	0	3
8.	TT8453	Technology of Yarn Spinning	PC	3	3	0	0	3
9.	TT8454	Woven Fabric Manufacture	PC	4	4	0	0	4
10.	TT8491	Knitting Technology	PC	3	3	0	0	3
11.	TT8411	Yarn Manufacture Laboratory II	PC	4	0	0	4	2
12.	TT8461	Fabric Manufacture Laboratory	PC	4	0	0	4	2
13.	TT8501	Process Control in Spinning	PC	3	3	0	0	3
14.	TT8551	Chemical Processing of Textile Material I	PC	3	3	0	0	3
15.	TT8552	Quality Evaluation of Fibres and Yarns	PC	3	3	0	0	3
16.	TT8591	Woven Fabric Structures	PC	3	3	0	0	3
17.	TT8561	Fabric Analysis Laboratory	PC	4	0	0	4	2
18.	TT8653	Garment Manufacturing Technology	PC	4	4	0	0	4
19.	TT8651	Chemical Processing of Textile Materials II	PC	3	3	0	0	3
20.	TT8654	Mechanics of Textile Machinery	PC	3	3	0	0	3
21.	TT8652	Fabric and Garment Quality Evaluation	PC	3	3	0	0	3
22.	TT8681	Textile Chemical Processing Laboratory	PC	4	0	0	4	2
23.	TT8611	Knitting and Garment Construction Laboratory	PC	4	0	0	4	2
24.	FT8661	Textile Quality Evaluation Laboratory	PC	4	0	0	4	2
25.	TT8751	Financial Management in Textile Industry	PC	3	3	0	0	3
26.	TT8791	Operations Research in Textile Industry	PC	3	3	0	0	3
27.	TT8792	Technical Textiles	PC	3	3	0	0	3
28.	TT8851	Bonded Fabrics	PC	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	HS8381	Interpersonal Skills/Listening and Speaking	EEC	2	0	0	2	1
2.	HS8461	Advanced Reading and Writing	EEC	2	0	0	2	1
3.	HS8581	Professional Communication	EEC	2	0	0	2	1
4.	TT8711	Internship	EEC	0	0	0	0	3
5.	TT8811	Project Work	EEC	20	0	0	20	10

SUMMARY

S.No.	SUBJECT AREA	CREDITS AS PER SEMESTER								CREDITS TOTAL
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	4	4							8
2.	BS	12	12	4	4					32
3.	ES	9	5	6	3	3				26
4.	PC		3	13	17	14	19	9	3	78
5.	PE					3	6	6	3	18
6.	OE					3		3		6
7.	EEC			1	1	1		2	10	15
	TOTAL	25	24	24	25	24	25	20	16	183

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AFFILIATED INSTITUTIONS
M.TECH.TEXTILE TECHNOLOGY
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM

1. Programme Educational Objectives (PEOs):

To enable the graduate students of Textile Technology and allied students to

a. Enhance their knowledge related to the theory of textile processes and textile machinery
b. Enhance their knowledge on advances in textile processes
c. Design, conduct and interpret the results of the textile experiments
d. Design new textile processes and products
e. Engross in life-long learning to keep abreast with emerging technologies

2. Programme Outcomes (POs):

Upon completion of the programme, the student shall be able to

1. Effectively teach the students at the undergraduate level
2. Innovate new process or product at the textile industry or textile research organizations.
3. Effectively carryout fundamental and applied research, and manage research and development activities in industry and research organizations
4. Manage textile industry and solve technological problems
5. Use the advanced techniques, skills, and modern tools necessary for practicing in the textile industry.
6. Communicate effectively and work in interdisciplinary groups.
7. Review, comprehend and report technological development.

PEO / PO Mapping

PEO	POs						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
a	✓	✓	✓	✓			
b	✓	✓	✓		✓		✓
c			✓	✓	✓	✓	
d		✓	✓		✓	✓	✓
e	✓	✓	✓				✓

1. Semester Course wise PO Mapping

		Course Title	1	2	3	4	5	6	7
YEAR I	SEMESTER I	Theory of Short Staple Spinning	✓	✓	✓	✓			
		Process Control and Fabric Engineering	✓	✓	✓	✓	✓		
		Statistical Application in Textile Engineering	✓		✓	✓	✓		
		Polymer Physics	✓	✓	✓			✓	
	SEMESTER II	Clothing Science	✓	✓	✓			✓	
		Colorations and Functional Finishes	✓	✓	✓	✓	✓		
		Textile Quality Evaluation	✓			✓		✓	✓
		Structural Mechanics of Yarns and Fabrics	✓	✓	✓	✓			
		Textile Quality Evaluation Lab	✓		✓	✓	✓	✓	
		Technical Seminar	✓				✓	✓	✓
		Course Title	**1**	**2**	**3**	**4**	**5**	**6**	**7**
YEAR II	SEMESTER III	Project Work (Phase I)		✓	✓	✓	✓	✓	✓
		Computer Aided Textile Design	✓	✓		✓	✓		
		Internship	✓	✓		✓	✓	✓	✓
	SEMESTER IV	Project Work (Phase II)		✓	✓	✓	✓	✓	✓

	Course Title	1	2	3	4	5	6	7
PROFESSIONAL ELECTIVES	Alternative Spinning Systems	✓	✓	✓	✓			
	Characterization of Textile Polymers	✓	✓	✓				
	Medical textiles	✓	✓	✓			✓	
	Theory of Drafting and Twisting	✓	✓	✓	✓			
	High Performance and Specialty Fibres	✓	✓	✓				
	Nano Technology in Textiles	✓	✓	✓		✓	✓	
	Process Control and Optimization in Yarn Spinning		✓		✓			✓
	Enzyme Technology for Textile Processing		✓	✓	✓		✓	
	Financial Management in Textile Industry	✓			✓		✓	
	Design Concepts in High Speed Fabric Formation		✓	✓			✓	✓
	Management of Textile Effluents				✓		✓	✓
	Textile Reinforced Composites		✓	✓			✓	
	Control Systems and Automation in Textile Engineering		✓			✓	✓	
	Design and Analysis of Textile Experiments		✓	✓		✓		
	Advances in Textile Printing	✓	✓			✓		✓
	Protective Textiles	✓	✓	✓				
	Project Planning and Management		✓		✓		✓	✓
	Process Control in Textile Wet Processing		✓	✓	✓			

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M.TECH.TEXTILE TECHNOLOGY
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
I TO IV SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	TX5101	Theory of Short Staple Spinning	PC	4	4	0	0	4
2.	TX5102	Process Control and Fabric Engineering	PC	4	4	0	0	4
3.	TX5103	Polymer Physics	PC	3	3	0	0	3
4.	TX5151	Statistical Application in Textile Engineering	PC	4	4	0	0	4
5.		Professional Elective I	PE	3	3	0	0	3
6.		Professional Elective II	PE	3	3	0	0	3
			TOTAL	**21**	**21**	**0**	**0**	**21**

SEMESTER II

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1	TX5201	Colorations and Functional Finishes	PC	4	4	0	0	4
2	TX5202	Textile Quality Evaluation	PC	3	3	0	0	3
3	TX5203	Structural Mechanics of Yarns and Fabrics	PC	4	4	0	0	4
4	TX5251	Clothing Science	PC	4	4	0	0	4
5		Professional Elective III	PE	3	3	0	0	3
6		Professional Elective IV	PE	3	3	0	0	3
PRACTICAL								
7	TX5211	Textile Quality Evaluation Lab	PC	2	0	0	2	1
8	TX5212	Technical Seminar	EEC	2	0	0	2	1
			TOTAL	**25**	**21**	**0**	**4**	**23**

SEMESTER III

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1		Professional Elective V	PE	3	3	0	0	3
2		Professional Elective VI	PE	3	3	0	0	3
PRACTICAL								
3	TX5311	Computer Aided Textile Design	PC	2	0	0	2	1
4	TX5312	Internship	EEC	-	0	0	0	1
5	TX5313	Project Work (Phase I)	EEC	12	0	0	12	6
			TOTAL	**20**	**6**	**0**	**14**	**14**

SEMESTERIV

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
PRACTICAL								
1	TX5411	Project Work (Phase II)	EEC	24	0	0	24	12
		TOTAL		**24**	**0**	**0**	**24**	**12**

TOTAL CREDITS: 70

LIST OF ELECTIVES
SEMESTER I, PROFESSIONAL ELECTIVE I

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5001	Alternative Spinning Systems	PE	3	3	0	0	3
2.	TX5002	Characterization of Textile Polymers	PE	3	3	0	0	3
3.	TX5091	Medical Textiles	PE	3	3	0	0	3

SEMESTER I, PROFESSIONAL ELECTIVE II

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5003	Theory of Drafting and Twisting	PE	3	3	0	0	3
2.	TX5092	High Performance and Specialty Fibres	PE	3	3	0	0	3
3.	TX5093	Nano Technology in Textiles	PE	3	3	0	0	3

SEMESTER II, PROFESSIONAL ELECTIVE III

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5004	Process Control and Optimization in Yarn Spinning	PE	3	3	0	0	3
2.	TY5071	Enzyme Technology for Textile Processing	PE	3	3	0	0	3
3.	TX5071	Financial Management in Textile Industry	PE	3	3	0	0	3

SEMESTER II, PROFESSIONAL ELECTIVE IV

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5005	Design concepts in High Speed Fabric Formation	PE	3	3	0	0	3
2.	TX5006	Management of Textile Effluents	PE	3	3	0	0	3
3.	TX5094	Textile Reinforced Composites	PE	3	3	0	0	3

SEMESTER III, PROFESSIONAL ELECTIVE V

Sl. No	COURSE CODE	COURSETITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5007	Control Systems and Automation in Textiles Engineering	PE	3	3	0	0	3
2.	TX5072	Design and Analysis of Textile Experiments	PE	3	3	0	0	3
3.	TY5091	Advances in Textile Printing	PE	3	3	0	0	3

SEMESTER III, PROFESSIONAL ELECTIVE VI

Sl. No	COURSE CODE	COURSETITLE	CATEG ORY	CONTACT PERIODS	L	T	P	C
1.	TX5073	Protective Textiles	PE	3	3	0	0	3
2.	TX5074	Project Planning and Management	PE	3	3	0	0	3
3.	TX5008	Process Control in Textile Wet Processing	PE	3	3	0	0	3

PROFESSIONAL CORE (PC)

S. No	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	TX5101	Theory of Short Staple Spinning	PC	4	4	0	0	4
2.	TX5102	Process Control and Fabric Engineering	PC	4	4	0	0	4
3.	TX5151	Statistical Application in Textile	PC	5	3	2	0	4

		Engineering						
4.	TX5103	Polymer Physics	PC	3	3	0	0	3
5.	TX5251	Clothing Science	PC	4	4	0	0	4
6.	TX5201	Colorations and Functional Finishes	PC	4	4	0	0	4
7.	TX5202	Textile Quality Evaluation	PC	3	3	0	0	3
8.	TX5203	Structural Mechanics of Yarns and Fabrics	PC	4	4	0	0	4
9.	TX5211	Textile Quality Evaluation Lab	PC	2	0	0	2	1
10.	TX5311	Computer Aided Textile Design	PC	2	0	0	2	1

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	TX5212	Technical Seminar	EEC	2	0	0	2	1
2.	TX5313	Project Work (Phase I)	EEC	12	0	0	12	6
3.	TX5312	Internship	EEC	-	0	0	0	1
4.	TX5411	Project Work (Phase II)	EEC	24	0	0	24	12

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OPEN ELECTIVES (Offered by other Branches)

OPEN ELECTIVES I, SEMESTER V

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	OCE551	Air Pollution and Control Engineering	OE	3	3	0	0	3
2.	OME551	Energy Conservation and Management	OE	3	3	0	0	3
3.	OCY553	Industrial Chemistry	OE	3	3	0	0	3
4.	OMF551	Product Design and Development	OE	3	3	0	0	3
5.	ORO551	Renewable Energy Sources	OE	3	3	0	0	3
6.	OME552	Vibration and Noise Control	OE	3	3	0	0	3
7.	OIM551	World Class Manufacturing	OE	3	3	0	0	3

OPEN ELECTIVES II, SEMESTER VII

S. No.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	OBM751	Basics of Human Anatomy and Physiology	OE	3	0	0	0	3
2.	OME751	Design of Experiments	OE	3	3	0	0	3
3.	OML752	Electronics Materials	OE	3	3	0	0	3
4.	OCE751	Environmental and Social Impact Assessment	OE	3	3	0	0	3
5.	OEN751	Green Building Design	OE	3	3	0	0	3
6.	OME754	Industrial Safety	OE	3	3	0	0	3
7.	OMF751	Lean Six Sigma	OE	3	3	0	0	3
8.	OAN751	Low Cost Automation	OE	3	3	0	0	3
9.	OCS752	Introduction to C Programming	OE	3	3	0	0	3

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CHOICE BASED CREDIT SYSTEM
MASTER OF BUSINESS ADMINISTRATION (GENERAL)

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

MBA programme curriculum is designed to prepare the post graduate students

I. To have a thorough understanding of the core aspects of the business.
II. To provide the learners with the management tools to identify, analyze and create business opportunities as well as solve business problems.
III. To prepare them to have a holistic approach towards management functions.
IV. To motivate them for continuous learning.
V. To inspire and make them practice ethical standards in business.

PROGRAMME OUTCOMES (POs):

On successful completion of the programme,

1. Ability to apply the business acumen gained in practice.
2. Ability to understand and solve managerial issues.
3. Ability to communicate and negotiate effectively, to achieve organizational and individual goals.
4. Ability to upgrade their professional and managerial skills in their workplace.
5. Ability to explore and reflect about managerial challenges, develop informed managerial decisions in a dynamically unstable environment.
6. Ability to take up challenging assignments.
7. Ability to understand one's own ability to set achievable targets and complete them.
8. Ability to pursue lifelong learning.
9. To have a fulfilling business career.

Programme Educational Objectives	Programme Outcomes								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
I	✓	✓					✓		
II				✓	✓	✓			
III	✓		✓		✓	✓	✓		
IV				✓		✓	✓	✓	
V		✓	✓					✓	✓

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
YEAR 1	SEM 1	Principles of Management	✓	✓	✓		✓				
		Accounting for Management	✓			✓					
		Economic Analysis for Business	✓	✓						✓	✓
		Legal Aspects of Business	✓								
		Organizational Behaviour	✓		✓						
		Statistics for Management	✓								
		Total Quality Management				✓	✓				✓
		Spoken and Written Communication	✓		✓						
	SEM 2	Applied Operations Research		✓			✓		✓		
		Business Research Methods		✓			✓		✓		
		Financial Management	✓	✓		✓	✓		✓		✓
		Human Resource Management	✓	✓		✓	✓		✓		✓
		Information Management	✓	✓		✓	✓		✓		✓
		Operations Management	✓	✓		✓	✓		✓		✓
		Marketing Management		✓		✓	✓		✓		
		Data Analysis and Business Modeling				✓	✓	✓			✓
YEAR 2	SEM 3	International Business Management				✓	✓				✓
		Strategic Management	✓	✓		✓	✓	✓	✓	✓	✓
		Elective I	Given below for each stream/Specialization								
		Elective II									
		Elective III									
		Elective IV									
		Elective V									
		Elective VI									
		Summer Training	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SEM 4	Project Work	✓	✓	✓	✓	✓	✓	✓	✓	✓

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
	Stream/ Specialization : **Marketing Management**										
		Brand Management	✓		✓		✓			✓	✓
		Consumer Behaviour	✓				✓	✓	✓	✓	✓
		Customer Relationship Management	✓				✓	✓	✓	✓	✓
		Integrated Marketing Communication	✓		✓		✓				✓
		Retail Marketing	✓		✓		✓			✓	✓
		Services Marketing	✓				✓	✓	✓		✓
		Social Marketing	✓				✓	✓	✓	✓	✓
	Stream/ Specialization : **Financial Management**										
		Banking Financial Services Management	✓		✓		✓			✓	✓
		Corporate Finance	✓		✓	✓				✓	✓
		Derivatives Management	✓		✓				✓	✓	✓
		Merchant Banking and Financial Services	✓		✓		✓			✓	✓
		Security Analysis and Portfolio Management	✓				✓				✓
		Strategic Investment and Financing Decisions	✓		✓			✓		✓	✓
		International Trade Finance	✓		✓		✓			✓	✓
	Stream/ Specialization : **Human Resource Management**										
		Entrepreneurship Development	✓		✓		✓			✓	✓
		Industrial Relations and Labour Welfare	✓		✓		✓			✓	✓
		Labour Legislations	✓		✓			✓			✓
		Managerial Behaviour and Effectiveness			✓		✓			✓	✓
		Organizational Theory, Design and Development	✓		✓		✓			✓	✓
		Strategic Human Resource Management			✓			✓			✓
	Stream/ Specialization : **Systems Management**										
		Advanced Database Management System	✓	✓	✓		✓	✓	✓		✓
		Data mining for Business Intelligence	✓		✓			✓			✓
		E-Business Management	✓					✓			✓

		Software Project Management and Quality									
		Enterprise Resource Planning	✓				✓			✓	✓
	Stream/ Specialization : **Operations Management**										
		Logistics Management	✓		✓					✓	✓
		Materials Management	✓				✓			✓	
		Product Design	✓		✓		✓				✓
		Project Management	✓		✓		✓			✓	✓
		Services Operations Management	✓		✓		✓				✓
		Supply Chain Management	✓		✓		✓			✓	✓

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
REGULATIONS – 2017
CHOICE BASED CREDIT SYSTEM
MASTER OF BUSINESS ADMINISTRATION (FULL TIME)
CURRICULA AND SYLLABI I TO IV SEMESTERS

SEMESTER - I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	BA5101	Economic Analysis for Business	PC	4	4	0	0	4
2.	BA5102	Principles of Management	PC	3	3	0	0	3
3.	BA5103	Accounting for Management	PC	4	4	0	0	4
4.	BA5104	Legal Aspects of Business	PC	3	3	0	0	3
5.	BA5105	Organizational Behaviour	PC	3	3	0	0	3
6.	BA5106	Statistics for Management	PC	3	3	0	0	3
7.	BA5107	Total Quality Management	PC	3	3	0	0	3
PRACTICALS								
8	BA5111	Spoken and Written Communication #	EEC	4	0	0	4	2
			TOTAL	**27**	**23**	**0**	**4**	**25**

No end semester examination is required for this course.

SEMESTER - II

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	BA5201	Applied Operations Research	PC	3	3	0	0	3
2.	BA5202	Business Research Methods	PC	3	3	0	0	3
3.	BA5203	Financial Management	PC	3	3	0	0	3
4.	BA5204	Human Resource Management	PC	3	3	0	0	3
5.	BA5205	Information Management	PC	3	3	0	0	3
6.	BA5206	Operations Management	PC	3	3	0	0	3
7	BA5207	Marketing Management	PC	4	4	0	0	4
PRACTICALS								
8	BA5211	Data Analysis and Business Modelling	EEC	4	0	0	4	2
			TOTAL	**26**	**22**	**0**	**4**	**24**

SUMMER SEMESTER (4 WEEKS)

SUMMER TRAINING

Summer Training – The training report along with the company certificate should be submitted within the two weeks of the reopening date of 3rd semester. The training report should be around 40 pages containing the details of training undergone, the departments wherein he was trained with duration (chronological diary), along with the type of managerial skills developed during training. The training report should be sent to the Controller of Examinations by the HOD through the Principal, before the last working day of the 3rd Semester.

SEMESTER - III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
1.	BA5301	International Business Management	PC	3	3	0	0	3
2	BA5302	Strategic Management	PC	3	3	0	0	3
3		Professional Elective I ***	PE	3	3	0	0	3
4		Professional Elective II***	PE	3	3	0	0	3
5		Professional Elective III***	PE	3	3	0	0	3
6		Professional Elective IV***	PE	3	3	0	0	3
7		Professional Elective V***	PE	3	3	0	0	3
8		Professional Elective VI***	PE	3	3	0	0	3
PRACTICALS								
9	BA5311	Summer Training	EEC	2	0	0	2	1
			TOTAL	**26**	**24**	**0**	**2**	**25**

*** Chosen electives should be from two streams of management of three electives each.

SEMESTER - IV

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PRACTICALS								
1.	BA5411	Project Work	EEC	24	0	0	24	12
				TOTAL	**0**	**0**	**24**	**12**

TOTAL NO. OF CREDITS:86

PROFESSIONAL CORE (PC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.		Principles of Management	PC	3	3	0	0	3
2.		Accounting for Management	PC	4	4	0	0	4
3.		Economic Analysis for Business	PC	4	4	0	0	4
4.		Legal Aspects of Business	PC	3	3	0	0	3
5.		Organizational Behaviour	PC	3	3	0	0	3
6.		Statistics for Management	PC	3	3	0	0	3
7.		Marketing Management	PC	4	4	0	0	4
8.		Spoken and Written Communication	PC	4	0	0	4	2
9.		Applied Operations Research	PC	3	3	0	0	3
10.		Business Research Methods	PC	3	3	0	0	3
11.		Strategic Management	PC	3	3	0	0	3
12.		Financial Management	PC	3	3	0	0	3
13.		Human Resource Management	PC	3	3	0	0	3
14.		Information Management	PC	3	3	0	0	3
15.		Operations Management	PC	3	3	0	0	3
16.		International Business Management	PC	3	3	0	0	3
17.		Total Quality Management	PC	3	3	0	0	3

PROFESSIONAL ELECTIVES (PE)

FUNCTIONAL SPECIALIZATIONS

1. **Students can take three electives subjects from two functional specializations**

Or

2. **Students can take six elective subjects from any one sectoral specializations**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
Stream/ Specialization : **Marketing Management**								
1.	BA5001	Brand Management	PE	3	3	0	0	3
2.	BA5002	Consumer Behaviour	PE	3	3	0	0	3
3.	BA5003	Customer Relationship Management	PE	3	3	0	0	3
4.	BA5004	Integrated Marketing Communication	PE	3	3	0	0	3
5.	BA5005	Retail Marketing	PE	3	3	0	0	3
6.	BA5006	Services Marketing	PE	3	3	0	0	3
7.	BA5007	Social Marketing	PE	3	3	0	0	3
Stream/ Specialization : **Financial Management**								
8.	BA5008	Banking Financial Services Management	PE	3	3	0	0	3
9.	BA5009	Corporate Finance	PE	3	3	0	0	3
10.	BA5010	Derivatives Management	PE	3	3	0	0	3
11.	BA5011	Merchant Banking and Financial Services	PE	3	3	0	0	3
12.	BA5012	Security Analysis and Portfolio Management	PE	3	3	0	0	3
13.	BA5013	Strategic Investment and Financing Decisions	PE	3	3	0	0	3
14.	BA5031	International Trade Finance	PE	3	3	0	0	3
Stream/ Specialization : **Human Resource Management**								
15.	BA5014	Entrepreneurship Development	PE	3	3	0	0	3
16.	BA5015	Industrial Relations and Labour Welfare	PE	3	3	0	0	3
17.	BA5016	Labour Legislations	PE	3	3	0	0	3
18.	BA5017	Managerial	PE	3	3	0	0	3

		Behaviour and Effectiveness						
19.	BA5018	Organizational Theory, Design and Development	PE	3	3	0	0	3
20.	BA5019	Strategic Human Resource Management	PE	3	3	0	0	3
Stream/ Specialization : **Systems Management**								
21.	BA5020	Advanced Database Management System	PE	3	3	0	0	3
22.	BA5021	Datamining for Business Intelligence	PE	3	3	0	0	3
23.	BA5022	Enterprise Resource Planning	PE	3	3	0	0	3
24.	BA5023	Software Project Management and Quality	PE	3	3	0	0	3
25.	BA5024	E-Business Management	PE	3	3	0	0	3
Stream/ Specialization : **Operations Management**								
26.	BA5025	Logistics Management	PE	3	3	0	0	3
27.	BA5026	Materials Management	PE	3	3	0	0	3
28.	BA5027	Product Design	PE	3	3	0	0	3
29.	BA5028	Project Management	PE	3	3	0	0	3
30.	BA5029	Services Operations Management	PE	3	3	0	0	3
31.	BA5030	Supply Chain Management	PE	3	3	0	0	3

SECTORAL SPECIALIZATIONS

1. **Students can take three electives subjects from two functional specializations**

or

2. **Students can take six elective subjects from any one sectoral specializations**

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
Sectoral Specialization : **Logistics and Supply Chain Management**								
1.	BA5051	Supply Chain Concepts and Planning	PE	3	3	0	0	3
2.	BA5052	Sourcing and Supply Management	PE	3	3	0	0	3
3.	BA5053	Supply Chain Inventory Management	PE	3	3	0	0	3
4.	BA5054	Supply Chain Information System	PE	3	3	0	0	3
5.	BA5055	Warehouse Management	PE	3	3	0	0	3
6.	BA5056	Transportation and Distribution Management	PE	3	3	0	0	3
7.	BA5057	Reverse and Contract Logistics	PE	3	3	0	0	3
8.	BA5058	Air Cargo Management	PE	3	3	0	0	3
9.	BA5059	Containerization and Allied Business	PE	3	3	0	0	3
10.	BA5060	Exim Management	PE	3	3	0	0	3
11.	BA5061	Fundamentals of Shipping	PE	3	3	0	0	3
12.	BA5062	Port and Terminal Management	PE	3	3	0	0	3
Sectoral Specialization :**Infrastructure and Real Estate Management**								
13.	BA5063	Infrastructure Planning Scheduling and Control	PE	3	3	0	0	3
14.	BA5064	Contracts and Arbitration	PE	3	3	0	0	3
15.	BA5065	Project Management for Infrastructure	PE	3	3	0	0	3
16.	BA5066	Management of Human Resources, Safety and Quality	PE	3	3	0	0	3
17.	BA5067	Disaster Mitigation and Management	PE	3	3	0	0	3
18.	BA5068	Economics and Financial Management in Construction	PE	3	3	0	0	3
19.	BA5069	Urban Environmental Management	PE	3	3	0	0	3
20.	BA5070	Smart Materials, Techniques and Equipments for Infrastructure	PE	3	3	0	0	3
21.	BA5071	Strategic Airport Infrastructure Management	PE	3	3	0	0	3
22.	BA5072	Real Estate Marketing and Management	PE	3	3	0	0	3
23.	BA5073	Infrastructure and Real Estate Entrepreneurship	PE	3	3	0	0	3
24.	BA5074	Valuation of Real Estate and Infrastructure Assets	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
1.	BA5111	Spoken and Written Communication #	EEC	4	0	0	4	2
2.	BA5211	Data Analysis and Business Modeling	EEC	4	0	0	4	2
3.	BA5311	Summer Training	EEC	2	0	0	2	1
4.	BA5411	Project Work	EEC	24	0	0	24	12

ANNA UNIVERSITY
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REGULATIONS – 2017
CURRICULUM AND SYLLABUS I TO IV SEMESTERS (FULL TIME)
MASTER OF COMPUTER APPLICATIONS

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

I. To prepare students to pursue lifelong learning and do research in computing field by providing solid technical foundations.
II. To provide students with various computing skills like analysis, design and development of innovative software products to meet the industry needs and excel as software professionals.
III. To prepare students to communicate and function effectively in teams in multidisciplinary fields within the global, societal and environmental context

PROGRAM OUTCOMES (POS) :

On successful completion of the program:

1. **Computational knowledge:** Apply knowledge of computing fundamentals, computing specialisation, mathematics, and domain knowledge appropriate for the computing specialisation to the solution of complex problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex computing problems reaching substantiated conclusions using first principles of mathematics, computing sciences, and relevant domain disciplines.
3. **Design/development of solutions:** Design solutions for complex computing problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern computing and IT tools including prediction and modeling to complex computing systems with an understanding of the limitations
6. **Research Aptitude:** Ability to independently carry out research / investigations, identify problems and develop solutions to solve practical problems.
7. **Innovation and Entrepreneurship:** Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the professional computing practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex system building activities with the stake holders and with society at large, such as, being able to comprehend

and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance**: Demonstrate knowledge and understanding of the management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSO)

PSO 1: Able to select suitable data model, appropriate architecture, platform to implement a system with good performance.

PSO 2: Able to design and integrate various system based components to provide user interactive solutions for various challenges.

Mapping Of Programme Educational Objectives With Programme Outcomes And Programme Specific Objectives

Programme Educational Objectives	Programme Outcomes												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1	√	√	√	√	√	√	√				√			√
2		√	√	√	√	√	√	√	√		√		√	
3		√		√	√	√			√	√	√	√	√	√

3. SEMESTER COURSE WISE PEO MAPPING

YEAR	SEMESTER	SUBJECT NAME	PEO1	PEO2	PEO3
YEAR 1	SEM 1	Matrices, Probability and Statistics	√		
		Advanced Data Structures and Algorithms	√	√	
		Advanced Database Technology	√	√	
		Object Oriented Software Engineering	√	√	√
		Python Programming	√	√	
		Research Methodology and Intellectual Property Rights	√		
		Advanced Database Technology Lab	√	√	
		Advanced Data Structures and Python Programming Lab	√	√	
		Communication Skills Enhancement – I			√
	SEM 2	Internet Programming	√	√	
		Cloud Computing Technologies	√	√	
		Artificial Intelligence and Machine Learning	√	√	
		Mobile Application Development	√	√	√
		Cyber Security	√	√	√
		Elective I			
		1. Software Project Management	√	√	√
		2. Agile Methodologies	√	√	√
		3. E Learning	√	√	√
		4. Software Quality and Testing	√	√	√
		5. Advances in Operating Systems	√	√	
		6. Digital Image Processing	√	√	
		Internet Programming Laboratory	√	√	
		Artificial Intelligence and Machine Learning Laboratory	√	√	
		Communication Skills Enhancement– II			√

YEAR	SEMESTER	SUBJECT NAME	PEO1	PEO2	PEO3
YEAR 2	SEM 3	Data Science	√	√	√
		Embedded Systems and Internet of Things	√	√	√
		Accounting and Financial Management for Application Development	√	√	√
		Elective II			
		1. Compiler Optimization Techniques	√	√	
		2. C# and .NET programming		√	
		3. Wireless Networking	√	√	

		4. Web Design	√	√	√
		5. Network Programming and Security	√	√	
		6. Microservices and Devops	√	√	
		Elective III			
		1. Social Network Analytics	√	√	√
		2. Bio Inspired Computing	√	√	
		3. Information Retrieval Techniques	√	√	
		4. Software Architecture	√	√	
		5. Digital Forensics	√	√	
		6. Data Mining and Data Warehousing Techniques	√	√	
		Elective IV			
		1. Data Visualization Techniques	√	√	
		2. Operations Research	√	√	
		3. Professional Ethics in IT	√	√	√
		4. Marketing Management			√
		5. Organizational Behavior	√	√	√
		6. Business Data Analytics		√	
		Elective V			
		1. Cryptocurrency and Blockchain Technologies	√	√	
		2. Advances in Networking	√	√	
		3. Soft Computing Techniques	√	√	
		4. Deep Learning	√	√	
		5. Big Data Processing	√	√	
		6. Natural Language Processing	√	√	
		Data Science Laboratory	√	√	
		Internet of Things Laboratory	√	√	
	SEM 4	Project Work	√	√	√

ANNA UNIVERSITY, CHENNAI
REGULATIONS – 2017
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CHOICE BASED CREDIT SYSTEM
MASTER OF COMPUTER APPLICATIONS

SEMESTER I

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT HOURS	L	T	P	C
THEORY								
1.	MA5101	Matrices, Probability and Statistics	FC	5	3	2	0	4
2.	MC5301	Advanced Data Structures and Algorithms	PC	3	3	0	0	3
3.	MC5105	Advanced Database Technology	PC	3	3	0	0	3
4.	MC5106	Object Oriented Software Engineering	PC	3	3	0	0	3
5.	MC5107	Python Programming	PC	3	3	0	0	3
6.	MC5108	Research Methodology and Intellectual Property Rights	PC	2	2	0	0	2
PRACTICALS								
7.	MC5114	Advanced Database Technology Laboratory	PC	4	0	0	4	2
8.	MC5115	Advanced Data Structures and Python Programming Laboratory	PC	4	0	0	4	2
9.	MC5116	Communication Skills Enhancement – I	EEC	2	0	0	2	1
			TOTAL	**29**	**17**	**2**	**10**	**23**

SEMESTER II

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT HOURS	L	T	P	C
THEORY								
1.	MC5206	Internet Programming	PC	3	3	0	0	3
2.	MC5207	Cloud Computing Technologies	PC	3	3	0	0	3
3.	MC5208	Artificial Intelligence and Machine Learning	PC	3	3	0	0	3
4.	MC5209	Mobile Application Development	PC	4	2	0	2	3
5.	MC5210	Cyber Security	PC	3	3	0	0	3
6.		Professional Elective I	PEC	3	3	0	0	3
PRACTICALS								
7.	MC5214	Internet Programming Laboratory	PC	4	0	0	4	2
8.	MC5215	Artificial Intelligence and Machine Learning Laboratory	PC	4	0	0	4	2
9.	MC5216	Communication Skills Enhancement– II	EEC	2	0	0	2	1
			TOTAL	**29**	**17**	**0**	**12**	**23**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT HOURS	L	T	P	C
THEORY								
1.	MC5306	Data Science	PC	3	3	0	0	3
2.	MC5307	Embedded Systems and Internet of Things	PC	3	3	0	0	3
3.	MC5308	Accounting and Financial Management for Application Development	PC	3	3	0	0	3
4.		Professional Elective II	PE	3	3	0	0	3
5.		Professional Elective III	PE	3	3	0	0	3
6.		Professional Elective IV	PE	3	3	0	0	3
7.		Professional Elective V:	PE	3	3	0	0	3
PRACTICALS								
1.	MC5314	Data Science Laboratory	PC	4	0	0	4	2
2.	MC5315	Internet of Things Laboratory	PC	4	0	0	4	2
			TOTAL	**29**	**21**	**0**	**8**	**25**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT HOURS	L	T	P	C
PRACTICALS								
1.	MC5414	Project Work	PC	24	0	0	24	12
			TOTAL	**24**	**0**	**0**	**24**	**12**

TOTAL CREDITS: 83

PROFESSIONAL ELECTIVES

Sl. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
PROFESSIONAL ELECTIVE - I , Semester 2								
1.	MC5003	Software Project Management	PE	3	3	0	0	3
2.	MC5016	Agile Methodologies	PE	3	3	0	0	3
3.	MC5017	E Learning	PE	3	3	0	0	3
4.	MC5018	Software Quality and Testing	PE	3	3	0	0	3
5.	MC5019	Advances in Operating Systems	PE	3	3	0	0	3
6.	MC5020	Digital Image Processing	PE	3	3	0	0	3
PROFESSIONAL ELECTIVE – II, Semester 3								
1.	MC5021	Compiler Optimization Techniques	PE	3	3	0	0	3
2.	MC5022	C# and .NET programming	PE	3	3	0	0	3
3.	MC5023	Wireless Networking	PE	3	3	0	0	3
4.	MC5024	Web Design	PE	3	3	0	0	3
5.	MC5025	Network Programming and Security	PE	3	3	0	0	3
6.	MC5026	Microservices and Devops	PE	3	3	0	0	3
PROFESSIONAL ELECTIVE – III, Semester 3								
1.	MC5027	Social Network Analytics	PE		3	0	0	3
2.	MC5028	Bio Inspired Computing	PE		3	0	0	3
3.	MC5029	Information Retrieval Techniques	PE		3	0	0	3
4.	MC5030	Software Architecture	PE		3	0	0	3
5.	MC5031	Digital Forensics	PE	3	3	0	0	3
6.	MC5032	Data Mining and Data Warehousing Techniques	PE	3	3	0	0	3
PROFESSIONAL ELECTIVE – IV, Semester 3								
1.	MC5033	Data Visualization Techniques	PE	3	3	0	0	3
2.	MC5034	Operations Research	PE	3	3	0	0	3
3.	MC5035	Professional Ethics in IT	PE	3	3	0	0	3
4.	MC5036	Marketing Management	PE	3	3	0	0	3
5.	MC5037	Organizational Behavior	PE	3	3	0	0	3
6.	MC5038	Business Data Analytics	PE	3	3	0	0	3

PROFESSIONAL ELECTIVE – V, Semester 3								
1.	MC5039	Cryptocurrency and Blockchain Technologies	PE	3	3	0	0	3
2.	MC5040	Advances in Networking	PE	3	3	0	0	3
3.	MC5041	Soft Computing Techniques	PE	3	3	0	0	3
4.	MC5042	Deep Learning	PE	3	3	0	0	3
5.	MC5043	Big Data Processing	PE	3	3	0	0	3
6.	MC5044	Natural Language Processing	PE	3	3	0	0	3

FOUNDATION COURSES (FC)

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	MA5101	Matrices, Probability and Statistics	FC	5	3	2	0	4

PROFESSIONAL CORE (PC)

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	MC5301	Advanced Data Structures and Algorithms	PC	3	3	0	0	3
2.	MC5105	Advanced Database Technology	PC	3	3	0	0	3
3.	MC5106	Object Oriented Software Engineering	PC	3	3	0	0	3
4.	MC5107	Python Programming	PC	3	3	0	0	3
5.	MC5108	Research Methodology and Intellectual Property Rights	PC	2	2	0	0	2
6.	MC5114	Advanced Database Technology Lab	PC	4	0	0	4	2
7.	MC5115	Advanced Data Structures and Python Programming Lab	PC	4	0	0	4	2
8.	MC5206	Internet Programming	PC	3	3	0	0	3
9.	MC5207	Cloud Computing Technologies	PC	3	3	0	0	3
10	MC5208	Artificial Intelligence and Machine Learning	PC	3	3	0	0	3
11	MC5209	Mobile Application Development	PC	4	2	0	2	3
12	MC5210	Cyber Security	PC	3	3	0	0	3
13	MC5214	Internet Programming Laboratory	PC	4	0	0	4	2
14	MC5215	Artificial Intelligence and Machine Learning Laboratory	PC	4	0	0	4	2

15	MC5306	Data Science	PC	3	3	0	0	3
16	MC5307	Embedded Systems and Internet of Things	PC	3	3	0	0	3
17	MC5308	Accounting and Financial Management for Application Development	PC	3	3	0	0	3
18	MC5314	Data Science Laboratory	PC	4	0	0	4	2
19	MC5315	Internet of Things Laboratory	PC	4	0	0	4	2

EMPLOYABILITY ENHANCEMENT COURSE (EEC)

SL. NO	COURSE CODE	COURSE TITLE	CATE GORY	CONTACT PERIODS	L	T	P	C
1.	MC5116	Communication Skills Enhancement – I	EEC	2	0	0	2	1
2.	MC5216	Communication Skills Enhancement– II	EEC	2	0	0	2	1
3.	MC5414	Project Work	EEC	24	0	0	24	12

BRIDGE COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CONTACT PERIODS	L	T	P	C
	Semester I						
1.	MA5102	Mathematical Foundations of Computer Science	3	3	0	0	3
2.	BX5001	Problem Solving And Programming In C	5	3	0	2	4
3.	BX5002	Digital logic and Computer Organization	3	3	0	0	3
4.	BX5003	Operating Systems	3	3	0	0	3
5.	BX5004	Data Structures and Algorithms	3	3	0	0	3
6.	BX5005	Programming and Data structures using C lab	4	0	0	4	2
	Semester II						
7.	BX5006	Data Base Management Systems	3	3	0	0	3
8.	BX5007	Java Programming	3	3	0	0	3
9	BX5008	Software Engineering	3	3	0	0	3
10.	BX5009	Basics of Computer Networks	3	3	0	0	3
11	BX5010	Java Programming Lab	4	0	0	4	2
12	BX5011	Data Base Management Systems Lab	4	0	0	4	2

MA5101 MATRICES, PROBABILITY AND STATISTICS L T P C
3 2 0 4

OBJECTIVES:

- To provide methods for understanding the consistency and solving the equation as well as for finding the Eigenvalues and Eigenvectors of square matrix.
- To provide foundation on Applied Probability
- To introducethe concepts of correlation and regression of random variables
- To use various statistical techniques in Application problems
- To introduce the concept of Design of Experiments for data analysis

UNIT - I MATRICES AND EIGENVALUE PROBLEMS 5

Matrices - Rank of a Matrix - Consistently of a system of linear equations - Solution of the matrix equation $\Delta x = b$ - Row - reduced Echelon Form - Eigenvalues and Eigenvectors - Properties - Cayley - Hamilton Theorem - Inverse of a matrix.

UNIT - II PROBABILITY AND RANDOM VARIABLES 15

Probability - Axioms of Probability - Conditional Probability - Addition and multiplication laws of Probability - Baye's theorem - Random Variables - Discrete and continuous random variables - Probability mass function and Probability density functions - Cumulative distribution function - Moments and variance of random variables - Properties - Binomial, Poisson, Geometric, Uniform, Exponential, Normal distributions and their properties.

UNIT - III TWO-DIMENTIONAL RANDOM VARIABLES 15

Joint probability distributions - Marginal and conditional probability distributions - Covariance - Correlation - Linear regression lines - Regression curves - Transform of random variables - Central limit theorem (for independent identically random variables).

UNIT - IV TESTING OF HYPOTHESIS 15

Sampling distributions - Tests based on small and large samples - Normal, Student's t, Chi-square and F distributions for testing of mean, variance and proportion and testing of difference of means variances and proportions - Tests for independence of attributes and goodness of fit.

UNIT - V DESIGN OF EXPERIMENTS 15

Analysis of variance - Completely randomized design - Random block design (One-way and Two-way classifications) - Latin square design -2^2 Factorial design.

TOTAL PERIODS:75

OUTCOMES:

After the completion of the course the student will be able to

- Test the consistency and solve system of linear equations as well as find the Eigenvalues and Eigenvector.
- Apply the Probability axioms as well as rules and the distribution of discrete and continuous ideas in solving real world problems.
- Apply the concepts of correlation and regression of random variables in solving application problems.
- Use statistical techniques in testing hypothesis on data analysis.
- Use the appropriate statistical technique of design of experiments in data analysis.

REFERENCE BOOKS:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 43rd Edition, New Delhi, 2015.
2. R.K. Jain and S.R.K Iyenger, Advanced Engineering Mathematics, Narosa Publishing House, New Delhi, 2002.
3. Devore, J.L, Probability and Statistics for Engineering and Sciences, Cengage Learning,
   8th Edition, New Delhi, 2014.
4. Miller and M. Miller, Mathematical Statistics, Pearson Education Inc., Asia 7th Edition, New Delhi, 2011.
5. Richard Johnson, Miller and Freund's Probability and Statistics for Engineer, Prentice Hall of India Private Ltd., 8th Edition, New Delhi, 2011.

Mapping of COs with POs and PSOs														
CO/POs & PSOs	PO												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	√	√	-											
CO2	√	√	-	-									√	
CO3	√	√	√	√									√	
CO4	√	√	√	√	√	√							√	
CO5	√	√	√	√	√	√							√	

MC5301 ADVANCED DATA STRUCTURES AND ALGORITHMS L T P C
3 0 0 3

OBJECTIVES:

- Understand and apply linear data structures-List, Stack and Queue
- Understand the graph algorithms.
- Learn different algorithm analysis techniques.
- Apply data structures and algorithms in real time applications
- Analyze the efficiency of an algorithm

UNIT I LINEAR DATA STRUCTURES 9

Introduction - Abstract Data Types (ADT) – Stack – Queue – Circular Queue - Double Ended Queue - Applications of stack – Evaluating Arithmetic Expressions - Other Applications - Applications of Queue - Linked Lists - Singly Linked List - Circularly Linked List - Doubly Linked lists – Applications of linked list – Polynomial Manipulation.

UNIT II NON-LINEAR DATA STRUCTURES 9

Binary Tree – expression trees – Binary tree traversals – applications of trees – Huffman Algorithm - Binary search tree - Balanced Trees - AVL Tree - B-Tree - Splay Trees – Heap- Heap operations- -Binomial Heaps - Fibonacci Heaps- Hash set.

DESIGN AND ANALYSIS OF A FIVE STAR HOTEL USING BUBBLE DECK SLAB

A DESIGN PROJECT REPORT

Submitted by

FLORA SELSHIYA RANI.K (110816103008)

KALYANI.V.NAIR (110816103009)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

CIVIL ENGINEERING

JAYA ENGINEERING COLLEGE, THIRUNINRAVUR

ANNA UNIVERSITY: CHENNAI 600 025

OCTOBER 2019

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this report **"DESIGN AND ANALYSIS OF A FIVE STAR HOTEL USING BUBBLE DECK SLAB"** is the bonafide work of **"FLORA SELSHIYA RANI.K and KALYANI.V.NAIR"** who carried out the design project work under my supervision.

SIGNATURE

Mrs. B. VEENA, M.E.,

HEAD OF THE DEPARTMENT

Department of Civil Engineering

Jaya Engineering College

Thiruninravur-602024

SIGNATURE

Mrs. B. VEENA,M.E.,

SUPERVISOR

Department of Civil Engineering

Jaya Engineering College

Thiruninravur-602024

Submitted for Viva Voce Examination held at Jaya Engineering College, THIRUNINRAVUR on...23.10.2019...

23/10/19

INTERNAL EXAMINER

23/10/19

EXTERNAL EXAMINER

DESIGNING AND ANALYSING OF A THEATRE USING WAFFLE SLAB

A PROJECT REPORT 2019-2020

Submitted by

P.ARUN KUMAR	**110816103001**
A.NIRMAL KUMAR	**110816103012**
R.RAJARAM	**110816103015**
L.DINESH KUMAR	**110816103303**

Is partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

CIVIL ENGINEERING

JAYA ENGINEERING COLLEGE

THIRUNINRAVUR - 602 024.

ANNA UNIVERSITY: CHENNAI-600 025.

October 2019

October 2019

BONAFIDE CERTIFICATE

Certified that this Project Report **"PLANNING, DESIGNING AND ANALYSING A THEATRE USING WAFFLE SLAB"** is the bonafide work of **"P. ARUN KUMAR"** who carried out the Project under my supervision.

SIGNATURE

Ms.B.VEENA,M.E.

HEAD OF THE DEPARTMENT

Assistant Professor

Department of Civil Engineering

Jaya Engineering College

Chennai – 602 024

SIGNATURE

Ms. B.VEENA,M.E.,

SUPERVISOR

Assistant Professor

Department of Civil Engineering

Jaya Engineering College

Chennai – 602 024

Submitted for the project Viva-Voce Examination held on 28/10/2019

Internal Examiner 28/10/19

External Examiner 28/10/19

DESIGN AND ANALYSIS OF INDOOR STADIUM

A DESIGN PROJECT REPORT

Submitted by

SUNDARA PANDIAN	110815103042
VAAMANAN S	110815103046
VIJAY PRASANNA G	110815103048
GULENSO TAYANG	110815103309

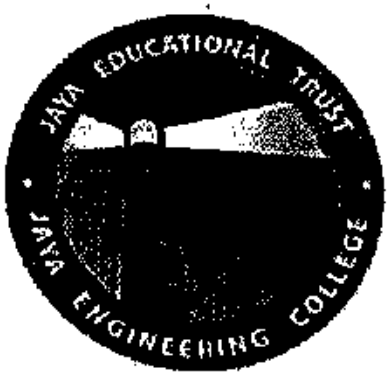
in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

CIVIL ENGINEERING



JAYA COLLEGE OF ENGINEERING

ANNA UNIVERSITY : CHENNAI 600 025

OCTOBER 2018

ANNA UNIVERSITY: CHENNAI-600 025

BONAFIDE CERTIFICATE

Certified that this Project Report "**DESIGN AND ANALYSIS OFINDOOR STADIUM** is the bonafide work of "

SUNDARA PANDIAN	**110815103042**
VAAMANAN S	**110815103046**
VIJAY PRASANNA G	**110815103048**
GULENSO TAYANG	**110815103309**

Who carried out the Project under my supervision.

SIGNATURE

Dr.R. RAVI,Ph.D.,

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Professor

Department of Civil Engineering

Jaya Engineering College

Chennai – 602 024

SIGNATURE

Ms. E.G.S.REVATHI, ME.,

SUPERVISOR

Assistant professor

Department of Civil Engineering

Jaya Engineering College

Chennai – 602 024

Submitted for the project Viva-Voce Examination held on 29-10-18

Internal Examiner

External Examiner

DESIGN OF MULTI STOREY CAR PARKING

A PROJECT REPORT

Submitted by

B .GAYATHRI (110815103010)

K. KANCHANA (110815103018)

R.K.N. MANIMEGALAI (110815103022)

S.REVATHI (110815103033)

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

BRANCH OF STUDY

JAYA ENGINEERING COLLEGE

ANNA UNIVERSITY : CHENNAI 602024

OCTOBER & 2018

ANNA UNIVERSITY: CHENNAI-602024

BONAFIDE CERTIFICATE

Certified that this Project Report " **DESIGN OF MULTI STOREY CAR PARKING**" is the bonafide work of **B.Gayathri (110815103010), K.Kanchana(110815103018),R.K.N.Manimegalai(110815103022), S.Revathi(110815103033)** who carried out the Project under my supervision in partial fulfilment of the requirement for the award of the degree of Bachelor Of Engineering in Civil Engineering of Jaya Engineering College, Chennai during the academic year 2017-2018

SIGNATURE	**SIGNATURE**
Dr.R. RAVI,Ph.D.,	**Mr. S. Kishore ME.,**
HEAD OF THE DEPARTMENT	**SUPERVISOR**
Professor	Assistant professor
Department of Civil Engineering	Department of Civil Engineering
Jaya Engineering College	Jaya Engineering College
Chennai – 602024	Chennai – 602024

Submitted for the project Viva-Voce Examination held on 29-10-18

Internal Examiner **External Examiner**

EXPERIMENTAL STUDY ON REACTIVE POWDER CONCRETE DEVELOPED USING INDUSTRIAL WASTE

THESIS REPORT

Submitted by

SATHIYENDIRAN.K (110817413008)

in partial fulfilment for the award of the degree of

MASTER OF ENGINEERING
IN STRUCTURAL ENGINEERING

JAYA ENGINEERING COLLEGE, THIRUNINRAVUR

DEPARTMENT OF CIVIL ENGINEERING

ANNA UNIVERSITY, CHENNAI 600 025

MAY 2019

ANNA UNIVERSITY CHENNAI: CHENNAI-600 025

BONAFIDE CERTIFICATE

Certified that this Report titled **"EXPERIMENTAL STUDY ON REACTIVE POWDER CONCRETE DEVELOPED USING INDUSTRIAL WASTE"** is the bonafide work of **SATHIYENDIRAN K (110817413008)** who carried out the work under my supervision. Certified further that to the best of my knowledge the work is reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE
Mrs. B. VEENA, ME.,
HEAD OF THE DEPARTMENT,
Assistant Professor,
Department of Civil Engineering,
Jaya Engineering College,
Chennai 602 024.

SIGNATURE
Mrs. B. VEENA, ME.,
SUPERVISOR,
Assistant professor,
Department of Civil Engineering,
Jaya Engineering College,
Chennai 602 024.

Submitted for the Project Viva-Voice Examination held on 21/05/2019

Internal Examiner

External Examiner

DESIGN AND DEVELOPMENT OF

OIL SKIMMER

A PROJECT REPORT

Submitted by

KAMALESH.S

MUTHAZHAGAN.A

PRAVEEN.G

SANTHOSH KANNAN.V

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

JAYA ENGINEERING COLLEGE, THIRUNINRAVUR

ANNA UNIVERSITY :: CHENNAI 600 025

APRIL 2017

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CERTIFICATE OF EVALUATION

COLLEGE : Jaya Engineering College

BRANCH & SEMESTER : Mechanical Engineering & VIII

NAME OF THE STUDENTS	TITLE OF THE PROJECT	NAME OF THE GUIDE
KAMALESH.S MUTHAZHAGAN.A PRAVEEN.G SANTHOSH KANNAN.V	DESIGN AND DEVELOPMENT OF OIL SKIMMER	Mr. K.SAKTHIVEL, M.E, Assistant Professor, Dept. of Mechanical Engineering, Jaya Engineering College, Thiruninravur - 602 024.

The report of the project work submitted by the above students of mechanical engineering department was confirmed to be report of the work done by the above students and then evaluated on 6.11.17.

INTERNAL EXAMINER

EXTERNAL EXAMINER

Scanned with CamScanner

EFFECT OF MECHANICAL PROPERTIES OF ELECTRO CO-DEPOSITION OF NI-P-ZRO_2 COATING ON ALUMINIUM ALLOY

A PROJECT REPORT

Submitted by

JOEL P	**[110814114019]**
VIGNESH R	**[110814114055]**
VIJAYAKUMAR S	**[110814114058]**
VISHAL C	**[110814114059]**

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

JAYA ENGINEERING COLLEGE, THIRUNINRAVUR

ANNA UNIVERSITY: CHENNAI 600 025

APRIL 2018

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CERTIFICATE OF EVALUTION

NAME OF COLLEGE : JAYA ENGINEERING COLLEGE

BRANCH & SEM : MECHANICAL ENGINEERING & VIII

Sl.No.	NAME OF THE STUDENT	TITLE OF PROJECT	NAME OF GUIDE
1 2 3 4	JOEL P VIGNESH R VIJAYAKUMAR S VISHAL C	EFFECT OF MECHANICAL PROPERTIES OF ELECTRO CO-DEPOSITION OF NI-P-ZRO_2 COATING ON ALUMINIUM ALLOY	Mr.M.KARUNAKARAN: ME.,(PhD)., Assistant Professor, Dept of Mechanical Engineering, Jaya Engineering College, Thiruninravur-602024

The report of the project work submitted by the above students in partial fulfillment for the award of "BACHELOR OF ENGINEERING" degree in "MECHANICAL ENGINEERING" was evaluated and confirmed to be report of the work done by the above students.

Submission for the project and viva-voice held on..19-04-2018.....

19/4/18

INTERNAL EXAMINER

19/4/18

EXTERNAL EXAMINER

Scanned with CamScanner

EFFECT OF MECHANICAL PROPERTIES OF ELECTRO-CODEPOSITION OF CU-NI-W-AL_2O_3 COATING ON 410 STAINLESS STEEL

A PROJECT REPORT

Submitted by

RAO M PAVANKUMAR M VENKATESHWAR [110814114306]

M SURESH [110814114310]

G NAGARJUNA [110814114305]

In partial fulfilments for the award of the degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

JAYA ENGINEERING COLLEGE, THIRUNINRAVUR

ANNA UNIVERSITY: CHENNAI 600 025

APRIL 2018

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ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"EFFECT OF MECHANICAL PROPERTIES OF ELECTRO-CODEPOSITION OF CU-NI-W-AL_2O_3 COATING ON 410 STAINLESS STEEL "** is the bonafide work of **"RAO M PAVANKUMAR MVENKATESHWAR (110814114306), M SURESH (110814114310)** and **G NAGARJUNA (110814114305)"** who carried out the project work under my supervision.

SIGNATURE

Mr.P.GUROSAMY, M.E,PhD.

HEAD OF THE DEPARTMENT

Professor

Department of Mechanical Engg.

Jaya Engineering College

Thiruninravur

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SIGNATURE

Mr.M.KARUNAKARAN,M.E,(PhD)

SUPERVISOR

Assistant Professor

Department of Mechanical Engg

Jaya Engineering College

Thiruninravur

Chennai-602024

Scanned with CamScanner

POWER GENERATION IN UAV SYSTEM

FOR LONG RANGE AND ENDURANCE

PROJECT REPORT

Submitted by

Pavithra.M	**110817101007**
Sruthi.K.S	**110817101015**
Swathi .M	**110817101016**

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

In

AERONAUTICAL ENGINEERING

From

JAYA ENGINEERING COLLEGE

ANNA UNIVERSITY:CHENNAI 600025

APRIL 2021

SUNIL ENTERPRISES

GSTIN : 33AAKPE0460C1ZG

Manufacturer of - Hi Fashion Export Fabrics

New No. 35/2, Old No. 16/2, Ground Floor, Subiksha Flats, Ameerjan Street, Choolaimedu,
Chennai - 600 094. Phone : 044 - 4862 7679, Mobile : 94441 15814
E-mail : sunilenterprises05@gmail.com

Date : 02/11/2020

TO WHOM IT MAY CONCERN

This is to certify that **Mr.M.Arunachalam** ,S/o. Mr. A.Muthaiyan, a student of B.Tech (Textile Technology), Jaya Engineering College, Thirunindravur, Chennai – 602 024, has successfully completed 14 days (From **5th Oct -20th Oct -2020)** internship programme with us & he was found punctual, hardworking and inquisitive.

We wish him every successes in life.

For **SUNIL ENTERPRISES**,

PROPRIETOR.

PRAMUKH KNITS

DATE 17/06/2019

PLACE TIRUPUR

TO WHOM IT MAY CONCERN

This is to certify that Ms.Deivani sree, Reg.no:110817212004,a student of B.Tech 2nd year Textile Technology, Jaya engineering College, Anna university Chennai has successfully completed 2 weeks (from 15/5/2019 to 29/5/2019)internship training at this company. During this period we found that she is disciplined, dedicated and determined in all subject matters assigned to her.

I wish her all success in his future forays.

Sincerely,

PRAMUKH KNITS
NO. 81/270 J - OPP KPR KNITS
PERIYAR COLONY,
TIRUPUR - 641 652.

SMS GARMENTS FACTORY
(DYEING DIVISON)

88/1, KSS Garden, Andipalayam (Po.), Andipalayam Pirivu,
E-mail : smsdying123@gmail.com,TIRUPUR - 641 687.

Date : 3/6/2019

CERTIFICATE

This is to Certify that MR.DHOORVASAN.N (Reg No: 110817212006) II year B.TECH Textile Engineering student of Jaya Engineering College, Chennai had undertaken a Inplant training from the period 28/05/2019 to 03/06/2019.

For SMS GARMENTS FACTORY

D. Murugesan

Partner

NSL TEXTILES
Cotton to Clothing

NSL Textiles Limited
CIN No: U15429AP2002PLC038489
Corp. Off: NSL Icon,
4th Floor, 8-2-684/2/A,
Road No.12, Banjara Hills,
Hyderabad - 500 034. India.
Ph : +91-40-3051 4444
Fax : +91-40-3051 4350
www.nsltextiles.com

Date : 30.06.2018

TO WHOM IT MAY CONCERN

This is to certify that **Mr.P.Divakar**,S/O Mr.Periyasamy,a student of B.Tech (Textile technology),Jaya Engineering College,Thiruninravur,Chennai -602 024,has successfully completed 7 days (**From 25thjune_2018 to 30thjune_2018**) internship programme with us he was found punctual,hardworking and inquisitive.

We wish him every success in life.

For NSL Textile Ltd,

UNIT HEAD 30/06/18

TIN No.33641620173

Kancheepuram Arignar Anna Silk Handloom Weaver's Co-op. Production & Sale Society Limited, K.H.1

"WORK HARD IN THE PATH OF ANNA"

20.06.2018

S.Prakash,
Joint Director/Managing Director

INSTITUTIONAL CERTIFICATE

Certify that **Ms.V.ANJANA,** a student of B.Tech (Textile Technology) of your college JAYA ENGINEERING COLLEGE has under gone Training in Kanchipuram Arignar Anna Silk Handloom Weavers Coop. Society for the period from 12.06.2018 to 15.06.2018

During the training period, her conduct was good.

Joint Director/Managing Director

20.6.18

498-499, Gandhi Road, Kancheepuram - 631 501. Phone : 044 - 27222148.
107,Gandhi Road, Kancheepuram - 631 501. Phone : 044 - 27231373
Branches : Chennai • Coimbatore • Salem • Karaikudi • Dharmapuri • Madurai • Tirunelveli Town • Virudhunagar • Krishnagiri • Tiruvannamalai
Kancheepuram • Chennai • Coimbatore • Erode • Trichy
annasilk1971@yahoo.com Fax No 044 27227186

SGS

THE FOUNDATION OF EVERYTHING TRUST

TO WHOM IT MAY CONCERN

This is to certify that Mrs. Dhanalakshmi has done her internship in SGS India Pvt ltd., Chennai from 22.05.19 to 07.06.2019.

She has attended on a training. This training was aimed to learn the testing knowledge. As part of the training. She learned various parameters by understanding the testing components.

During the internship she demonstrated good testing skills with a self-motivated attitude to learn new things. Her performance exceeded expectations and was able to complete the training successfully on time.

We wish him all the best for his future endeavors.

Dhanalakshmi

S.G.S. INDIA PVT. LTD. CHENNAI-58 LABORATORY

SGS India Pvt Ltd.
No. 28B/1 (SP) 28b/2 (SP)
2nd Main Road
Ambattur Industrial Estate
Chennai – 600 058
Tamil Nadu
India.

SGS

THE FOUNDATION OF EVERYTHING TRUST

TO WHOM IT MAY CONCERN

This is to certify that Mr. Durai Murugan has done he internship in SGS India Pvt ltd., Chennai from 22.05.19 to 07.06.2019.

He has attended on a training. This training was aimed to learn the testing knowledge. As part of the training. He learned various parameters by understanding the testing components.

During the internship he demonstrated good testing skills with a self-motivated attitude to learn new things. He performance exceeded expectations and was able to complete the training successfully on time.

We wish him all the best for his future endeavors.

Durai Murugan.

S. Durai Murugan.

S.G.S. INDIA PVT. LTD. CHENNAI

SGS India Pvt Ltd.
No. 28B/1 (SP) 28b/2 (SP)
2nd Main Road
Ambattur Industrial Estate
Chennai – 600 058
Tamil Nadu
India.

RAMJET PROJECTILE DESIGN FOR ARTILLERY GUNS

PROJECT REPORT

Submitted by

Navaneeth. P	110817101006
Vivek. T	110817101017
Gugan. M	110817101002
Mahaa Lakshmi. A	110817101004

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

In

AERONAUTICAL ENGINEERING

From

JAYA ENGINEERING COLLEGE

ANNA UNIVERSITY: CHENNAI 600025

APRIL 2021

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"RAMJET PROJECTILE FOR ARTILLERY GUNS"**, is the bonafide work of **"NAVANEETH P, VIVEK T, GUGAN M, MAHAA LAKSHMI"**

Who carried out the project work under my supervision.

SIGNATURE

Mr.S.KEVIN BENNETT, M.E.,

HEAD OF THE DEPARTMENT

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JAYA ENGINEERING COLLEGE

CTH Road, Prakash Nagar,

Thiruninravur, Chennai-602024

Head of the Department
Department of Aeronautical Engineering
Jaya Engineering College,
Thiruninravur-602024

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MR.R.NAGENDRAPRASAD, M.TECH

ASSISTANT PROFFESOR

Department of Aeronautical Engineering

JAYA ENGINEERING COLLEGE

CTH Road, Prakash Nagar,

Thiruninravur, Chennai-602024

Submitted for the Viva- Voce held on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

CONTOUR DESIGN AND FLOW ANALYSIS OF LINEAR SPIKE NOZZLE

PROJECT REPORT

Submitted by

MUTHAIYA . N	110817101005
PRATHAP . D	110817101009
SRIDHAR . G	110817101014

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

In

AERONAUTICAL ENGINEERING

From

JAYA ENGINEERING COLLEGE

Affiliated to

ANNA UNIVERSITY: CHENNAI 600025

APRIL 2021

BONAFIDE CERTIFICATE

Certified that project report **"CONTOUR ANALYSIS OF LINEAR SPIKE NOZZLE UNDER VARIABLE AMBIENT AND VACUUM CONDITIONS"** is the bonafide work of

SRIDHAR .G **110817101014**

Who carried out the project under the supervision.

S. Kevin Bennett

SIGNATURE

Mr.S.KEVIN BENNETT (M.E)
Head of the department
Department of Aeronautical Engineering
JAYA ENGINEERING COLLEGE
C.T.H Road, prakash nagar,
Thiruninravur - 602024

Head of the Department
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S. Kevin Bennett

SIGNATURE

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Project Supervisor

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Thiruninravur - 602024

Submitted for the Viva- voice held on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

JAYA ENGINEERING COLLEGE

THIRUNINRAVUR-602024

Affiliated to Anna University, Chennai-600025

AE-8613 AIRCRAFT DESIGN PROJECT-I

INTERNATIONAL MEDIUM-RANGE 280 SEATER PASSENGER AIRCRAFT

Submitted by,

Ajay Milton	**110818101001**
Aravlnd M	**110818101003**
Bharath N	**110818101004**
Deepali Gupta	**110818101005**

In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

In

AERONAUTICAL ENGINEERING

From

JAYA ENGINEERING COLLEGE

ANNA UNIVERSITY: CHENNAI 600025

APRIL 2021

BONAFIDE CERTIFICATE

Certified that this project report **INTERNATIONAL MEDIUM-RANGE 280 SEATER PASSENGER AIRCRAFT** is the bonafide work of

Ajay Milton	**110818101001**
Araviud M	**110818101003**
Bharath N	**110818101004**
Deepali Gupta	**110818101005**

Who carried out the project work under my supervision.

HEAD OF DEPARTMENT

Head of the Department
Department of Aeronautical Engineering
Jaya Engineering College,
Thiruninravur-602024.

SIGNATURE OF STAFF IN CHARGE

Submitted for the viva-voice held on .....

Internal Examiner

External Examiner

PIN 602024

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

R - 2013

B.E. AERONAUTICAL ENGINEERING

I – VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	GE6252	Basic Electrical and Electronics Engineering	4	0	0	4
6.	GE6253	Engineering Mechanics	3	1	0	4
PRACTICALS						
7.	GE6261	Computer Aided Drafting and Modeling Laboratory	0	1	2	2
8.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
		TOTAL	**19**	**4**	**4**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	ME6352	Manufacturing Technology	3	0	0	3
3.	AE6301	Aero Engineering Thermodynamics	3	0	0	3
4.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
5.	CE6452	Solid Mechanics	3	0	0	3
6.	AE6302	Elements of Aeronautics	3	0	0	3
PRACTICAL						
7.	CE6315	Strength of Materials Laboratory	0	0	3	2
8.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
9.	AE6311	Thermodynamics Laboratory	0	0	3	2
10.	AE6312	CAM and Manufacturing Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**12**	**27**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6459	Numerical Methods	3	1	0	4
2.	AE6401	Aerodynamics - I	3	0	0	3
3.	AE6402	Aircraft Systems and Instruments	3	0	0	3
4.	AT6302	Mechanics of Machines	3	1	0	4
5.	AE6403	Aircraft Structures - I	3	1	0	4
6.	AE6404	Propulsion - I	3	0	0	3
PRACTICAL						
7.	AE6411	Aircraft Structures Laboratory - I	0	0	3	2
8.	AE6412	Aerodynamics Laboratory	0	0	3	2
9.	AE6413	CAD and Aircraft Component Drawing	0	0	4	2
		TOTAL	**18**	**3**	**10**	**27**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	AE6501	Flight Dynamics	3	1	0	4
2.	AE6502	Aircraft Structures - II	3	1	0	4
3.	AE6503	Aerodynamics - II	3	1	0	4
4.	AE6504	Propulsion - II	3	0	0	3
5.	AE6505	Control Engineering	3	0	0	3
6.	GE6351	Environmental Science and Engineering	3	0	0	3
PRACTICAL						
7.	AE6511	Aircraft Structures Laboratory - II	0	0	3	2
8.	AE6512	Propulsion Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
		TOTAL	**18**	**3**	**10**	**27**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	AE6601	Finite Element Methods	3	1	0	4
3.	AE6602	Vibrations and Elements of Aeroelasticity	3	0	0	3
4.	AE6603	Composite Materials and Structures	3	0	0	3
5.	AE6604	Aircraft Materials and Processes	3	0	0	3
6.		Elective – I	3	0	0	3
PRACTICAL						
7.	AE6611	Aero Engine and Airframe Laboratory	0	0	3	2
8.	AE6612	Aircraft Design Project - I	0	0	3	2
9.	AE6613	Computer Aided Simulation Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**9**	**25**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	GE6757	Total Quality Management	3	0	0	3
2.	AE6701	Avionics	3	0	0	3
3.	ME6014	Computational Fluid Dynamics	3	0	0	3
4.	AE6702	Experimental Stress Analysis	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	AE6711	Aircraft Design Project - II	0	0	3	2
8.	AE6712	Aircraft Systems Laboratory	0	0	3	2
9.	AE6713	Flight Integration Systems and Control Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**9**	**24**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	AE6801	Wind Tunnel Techniques	3	0	0	3
2.		Elective – IV	3	0	0	3
PRACTICAL						
3.	AE6811	Project Work	0	0	12	6
		TOTAL	**6**	**0**	**12**	**12**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 193

ELECTIVES FOR M.E. AERONAUTICAL ENGINEERING

SEMESTER VI
ELECTIVE – I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	AE6001	Theory of Elasticity	3	0	0	3
2.	AE6002	Aircraft General Engineering and Maintenance Practices	3	0	0	3
3.	AE6003	Space Mechanics	3	0	0	3
4.	AE6004	Heat Transfer	3	0	0	3
5.	GE6084	Human Rights	3	0	0	3

SEMESTER VII
ELECTIVES– II

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	AE6005	Helicopter Theory	3	0	0	3
2.	AE6006	Theory of Plates and Shells	3	0	0	3
3.	AE6007	Fatigue and Fracture	3	0	0	3
4.	AE6008	UAV Systems	3	0	0	3
5.	GE6083	Disaster Management	3	0	0	3

ELECTIVES – III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	AE6009	Industrial Aerodynamics	3	0	0	3
2.	AE6010	Airframe Maintenance and Repair	3	0	0	3
3.	AE6011	Aero Engine Maintenance and Repair	3	0	0	3
4.	AE6012	Air Traffic Control and Planning	3	0	0	3

SEMESTER VIII
ELECTIVES – IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	AE6013	Hypersonic Aerodynamics	3	0	0	3
2.	AE6014	Experimental Aerodynamics	3	0	0	3
3.	AE6015	Rockets and Missiles	3	0	0	3
4.	AE6016	Structural Dynamics	3	0	0	3

ANNA UNIVERSITY, CHENNAI

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B. E. CIVIL ENGINEERING

I TO VIII SEMESTERS CURRICULUM & SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English - I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICAL						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English - II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	GE6252	Basic Electrical and Electronics Engineering	4	0	0	4
6.	GE6253	Engineering Mechanics	3	1	0	4
PRACTICAL						
7.	GE6261	Computer Aided Drafting and Modeling Laboratory	0	1	2	2
8.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
		TOTAL	**19**	**4**	**4**	**25**

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	GE6351	Environmental Science and Engineering	3	0	0	3
3.	CE6301	Engineering Geology	3	0	0	3
4.	CE6302	Mechanics of Solids	3	1	0	4
5.	CE6303	Mechanics of Fluids	3	0	0	3
6.	CE6304	Surveying I	3	0	0	3
PRACTICAL						
7.	CE6311	Survey Practical I	0	0	4	2
8.	CE6312	Computer Aided Building Drawing	0	0	4	2
		TOTAL	**18**	**2**	**8**	**24**

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6459	Numerical Methods	3	1	0	4
2.	CE6401	Construction Materials	3	0	0	3
3.	CE6402	Strength of Materials	3	1	0	4
4.	CE6403	Applied Hydraulic Engineering	3	1	0	4
5.	CE6404	Surveying II	3	0	0	3
6.	CE6405	Soil Mechanics	3	0	0	3
PRACTICAL						
7.	CE6411	Strength of Materials Laboratory	0	0	3	2
8.	CE6412	Hydraulic Engineering Laboratory	0	0	3	2
9.	CE6413	Survey Practical II	0	0	4	2
		TOTAL	**18**	**3**	**10**	**27**

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CE6501	Structural Analysis I	3	1	0	4
2.	CE6502	Foundation Engineering	3	0	0	3
3.	CE6503	Environmental Engineering I	3	0	0	3
4.	CE6504	Highway Engineering	3	0	0	3
5.	CE6505	Design of Reinforced Concrete Elements	3	0	0	3
6.	CE6506	Construction Techniques, Equipment and Practice	3	0	0	3
PRACTICAL						
7.	GE6674	Communication and Soft skills- Laboratory Based	0	0	4	2
8.	CE6511	Soil Mechanics Laboratory	0	0	4	2
9.	CE6512	Survey Camp*	-	-	-	1
		TOTAL	**18**	**1**	**8**	**24**

* Survey Camp to be conducted for a period of 2 weeks during 4th Semester Summer Vacation

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CE6601	Design of Reinforced Concrete & Brick Masonry Structures	3	0	0	3
2.	CE6602	Structural Analysis II	3	1	0	4
3.	CE6603	Design of Steel Structures	3	1	0	4
4.	CE6604	Railways, Airports and Harbour Engineering	3	0	0	3
5.	CE6605	Environmental Engineering II	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	CE6611	Environmental Engineering Laboratory	0	0	3	2
8.	CE6612	Concrete and Highway Engineering Laboratory	0	0	3	2
		TOTAL	**18**	**2**	**6**	**24**

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CE6701	Structural Dynamics and Earthquake Engineering	3	0	0	3
2.	CE6702	Prestressed Concrete Structures	3	0	0	3
3.	CE6703	Water Resources and Irrigation Engineering	3	0	0	3
4.	CE6704	Estimation and Quantity Surveying	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	CE6711	Computer Aided Design and Drafting Laboratory	0	0	4	2
8.	CE6712	Design Project	0	0	4	2
		TOTAL	**18**	**0**	**8**	**22**

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
PRACTICAL						
4.	CE6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL NO OF CREDITS: 187

LIST OF ELECTIVES

ELECTIVE I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CE6001	Hydrology	3	0	0	3
2.	CE6002	Concrete Technology	3	0	0	3
3.	CE6003	Remote Sensing Techniques and GIS	3	0	0	3
4.	CE6004	Architecture	3	0	0	3
5.	GE6075	Professional Ethics in Engineering	3	0	0	3
6.	CE6005	Construction Planning and Scheduling	3	0	0	3

ELECTIVE II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
7.	CE6006	Traffic Engineering and Management	3	0	0	3
8.	CE6007	Housing Planning and Management	3	0	0	3
9.	CE6008	Groundwater Engineering	3	0	0	3
10.	CE6009	Water Resources Systems Analysis	3	0	0	3
11.	CE6010	Pavement Engineering	3	0	0	3

ELECTIVE III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
12.	EN6801	Environmental Impact Assessment	3	0	0	3
13.	CE6023	Industrial Waste Management	3	0	0	3
14	CE6011	Air Pollution Management	3	0	0	3
15.	EN6501	Municipal Solid Waste Management	3	0	0	3
16.	CE6012	Ground Improvement Techniques	3	0	0	3
17.	GE6083	Disaster Management	3	0	0	3

ELECTIVE IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
18.	CE6013	Bridge Structures	3	0	0	3
19.	CE6014	Storage Structures	3	0	0	3
20.	CE6015	Tall Buildings	3	0	0	3
21.	CE6016	Prefabricated Structures	3	0	0	3
22.	CE6017	Experimental Analysis of Stress	3	0	0	3
23.	GE6757	Total Quality Management	3	0	0	3
24.	GE6084	Human Rights	3	0	0	3

ELECTIVE V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
25.	CE6018	Computer Aided Design of Structures	3	0	0	3
26.	CE6019	Industrial Structures	3	0	0	3
27.	CE6020	Finite Element Techniques	3	0	0	3
28.	CE6021	Repair and Rehabilitation of Structures	3	0	0	3
29.	CE6022	Earthquake Geotechnical Engineering	3	0	0	3

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ANNA UNIVERSITY :: CHENNAI 600 025

REGULATIONS - 2013

M.E. STRUCTURAL ENGINEERING

I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA7154	Advanced Mathematical Methods	3	1	0	4
2.	ST7101	Concrete Structures	3	0	0	3
3.	ST7102	Structural Dynamics	3	0	0	3
4.	ST7103	Theory of Elasticity and Plasticity	3	0	0	3
5.		Elective I	3	0	0	3
6.		Elective II	3	0	0	3
		TOTAL	**18**	**1**	**0**	**19**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ST7201	Finite Element Analysis	2	0	2	3
2.	ST7202	Experimental Techniques and Instrumentation	2	0	2	3
3.	ST7203	Steel Structures	3	0	0	3
4.	ST7204	Earthquake Analysis and Design of Structures	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
PRACTICAL						
7.	ST7211	Advanced Structural Engineering Laboratory	0	0	4	2
		TOTAL	**16**	**0**	**8**	**20**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.		Elective V	3	0	0	3
2.		Elective VI	3	0	0	3
3.		Elective VII	3	0	0	3
PRACTICAL						
4.	ST7311	Seminar	0	0	2	1
5.	ST7312	Practical Training (4 Weeks)	-	-	-	1
6.	ST7313	Project Work (Phase I)	0	0	12	6
		TOTAL	**9**	**0**	**14**	**17**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1.	ST7411	Project Work (Phase – II)	0	0	24	12
		TOTAL	**0**	**0**	**24**	**12**

TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE: 68

LIST OF ELECTIVES

SEMESTER – I (Elective – I & II)

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ST7001	Analysis and Design of Tall Buildings	3	0	0	3
2.	ST7002	Maintenance and Rehabilitation of Structures	3	0	0	3
3.	ST7003	Offshore Structures	3	0	0	3
4.	ST7004	Optimization of Structures	3	0	0	3
5.	ST7005	Matrix Methods for Structural Analysis	3	0	0	3
6.	CN7001	Advanced Concrete Technology	3	0	0	3

SEMESTER – II (Elective – III & IV)

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
7.	ST7006	Design of Bridges	3	0	0	3
8.	ST7007	Mechanics of Composite Materials	3	0	0	3
9.	ST7008	Pre-stressed Concrete	3	0	0	3
10.	ST7009	Wind and Cyclone Effects on Structures	3	0	0	3
11.	ST7010	Design of Sub Structures	3	0	0	3
12.	ST7011	Computer Aided Analysis and Design	3	0	2	4

SEMESTER –III (Elective – V, VI & VII)

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
13.	ST7012	Design of Shell and Spatial Structures	2	0	2	3
14.	ST7013	Design of Steel Concrete Composite Structures	3	0	0	3
15.	ST7014	Industrial Structures	3	0	0	3
16.	ST7015	Nonlinear Analysis of Structures	3	0	0	3
17.	ST7016	Prefabricated Structures	3	0	0	3
18.	ST7017	Theory of Plates	3	0	0	3
19.	ST7018	Stability of Structures	3	0	0	3

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

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B.E. COMPUTER SCIENCE AND ENGINEERING

I TO VIII SEMESTER CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	CS6201	Digital Principles and System Design	3	0	0	3
6.	CS6202	Programming and Data Structures I	3	0	0	3
PRACTICALS						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	CS6211	Digital Laboratory	0	0	3	2
9.	CS6212	Programming and Data Structures Laboratory I	0	0	3	2
		TOTAL	**18**	**2**	**8**	**25**

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CS6301	Programming and Data Structure II	3	0	0	3
3.	CS6302	Database Management Systems	3	0	0	3
4.	CS6303	Computer Architecture	3	0	0	3
5.	CS6304	Analog and Digital Communication	3	0	0	3
6.	GE6351	Environmental Science and Engineering	3	0	0	3
PRACTICAL						
7.	CS6311	Programming and Data Structure Laboratory II	0	0	3	2
8.	CS6312	Database Management Systems Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**6**	**23**

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6453	Probability and Queueing Theory	3	1	0	4
2.	CS6551	Computer Networks	3	0	0	3
3.	CS6401	Operating Systems	3	0	0	3
4.	CS6402	Design and Analysis of Algorithms	3	0	0	3
5.	EC6504	Microprocessor and Microcontroller	3	0	0	3
6.	CS6403	Software Engineering	3	0	0	3
PRACTICAL						
7.	CS6411	Networks Laboratory	0	0	3	2
8.	CS6412	Microprocessor and Microcontroller Laboratory	0	0	3	2
9.	CS6413	Operating Systems Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**9**	**25**

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6566	Discrete Mathematics	3	1	0	4
2.	CS6501	Internet Programming	3	1	0	4
3.	CS6502	Object Oriented Analysis and Design	3	0	0	3
4.	CS6503	Theory of Computation	3	0	0	3
5.	CS6504	Computer Graphics	3	0	0	3
PRACTICAL						
6.	CS6511	Case Tools Laboratory	0	0	3	2
7.	CS6512	Internet Programming Laboratory	0	0	3	2
8.	CS6513	Computer Graphics Laboratory	0	0	3	2
		TOTAL	**15**	**2**	**9**	**23**

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6601	Distributed Systems	3	0	0	3
2.	IT6601	Mobile Computing	3	0	0	3
3.	CS6660	Compiler Design	3	0	0	3
4.	IT6502	Digital Signal Processing	3	1	0	4
5.	CS6659	Artificial Intelligence	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	CS6611	Mobile Application Development Laboratory	0	0	3	2
8.	CS6612	Compiler Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	**18**	**1**	**10**	**25**

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6701	Cryptography and Network Security	3	0	0	3
2.	CS6702	Graph Theory and Applications	3	0	0	3
3.	CS6703	Grid and Cloud Computing	3	0	0	3
4.	CS6704	Resource Management Techniques	3	0	0	3
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	CS6711	Security Laboratory	0	0	3	2
8.	CS6712	Grid and Cloud Computing Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**6**	**22**

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6801	Multi – Core Architectures and Programming	3	0	0	3
2.		Elective IV	3	0	0	3
3.		Elective V	3	0	0	3
PRACTICAL						
4.	CS6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL NO. OF CREDITS: 184

LIST OF ELECTIVES

SEMESTER VI – Elective I

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	CS6001	C# and .Net programming	3	0	0	3
2.	GE6757	Total Quality Management	3	0	0	3
3.	IT6702	Data Warehousing and Data Mining	3	0	0	3
4.	CS6002	Network Analysis and Management	3	0	0	3
5.	IT6004	Software Testing	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

SEMESTER VII – Elective II

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
7.	CS6003	Ad hoc and Sensor Networks	3	0	0	3
8.	CS6004	Cyber Forensics	3	0	0	3
9.	CS6005	Advanced Database Systems	3	0	0	3
10.	BM6005	Bio Informatics	3	0	0	3
11.	IT6801	Service Oriented Architecture	3	0	0	3

SEMESTER VII – Elective III

S.NO	CODE NO.	COURSE TITLE	L	T	P	C
12.	IT6005	Digital Image Processing	3	0	0	3
13.	EC6703	Embedded and Real Time Systems	3	0	0	3
14.	CS6006	Game Programming	3	0	0	3
15.	CS6007	Information Retrieval	3	0	0	3
16.	IT6006	Data Analytics	3	0	0	3

SEMESTER VIII – Elective IV

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
17.	CS6008	Human Computer Interaction	3	0	0	3
18.	CS6009	Nano Computing	3	0	0	3
19.	IT6011	Knowledge Management	3	0	0	3
20.	CS6010	Social Network Analysis	3	0	0	3
21.	CS6013	Foundation Skills in Integrated Product Development	3	0	0	3

SEMESTER VIII – Elective V

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
22.	MG6088	Software Project Management	3	0	0	3
23.	GE6075	Professional Ethics in Engineering	3	0	0	3
24.	CS6011	Natural Language Processing	3	0	0	3
25.	CS6012	Soft Computing	3	0	0	3
26.	GE6083	Disaster Management	3	0	0	3

AFFILIATED INSTITUTIONS

ANNA UNIVERSITY, CHENNAI

REGULATIONS – 2013

M.E. COMPUTER SCIENCE AND ENGINEERING

I TO IV SEMESTERS CURRICULA AND SYLLABI (FULL TIME)

PROGRAM EDUCATIONAL OBJECTIVES (PEO):

Graduates of this M. E. Computer Science and Engineering will be able to

1. Apply the necessary mathematical tools and fundamental & advanced knowledge of computer science & engineering
2. Develop computer/software/network systems understanding the importance of social, business, technical, environmental, and human context in which the systems would work
3. Articulate fundamental concepts, design underpinnings of computer/software/network systems, and research findings to train professionals or to educate engineering students
4. Contribute effectively as a team member/leader, using common tools and environment, in computer science and engineering projects, research, or education
5. Pursue life-long learning and research in selected fields of computer science & engineering and contribute to the growth of those fields and society at large

PROGRAM OUTCOMES:

- Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.
- Identify, formulate, research literature and solve *complex* engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.
- Design solutions for *complex* engineering problems and *design* systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- Conduct investigations of *complex* problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
- Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to *complex* engineering activities, with an understanding of the limitations.
- Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
- Communicate effectively on *complex* engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.
- Understand and commit to professional ethics and responsibilities and norms of engineering practice.
- Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.
- Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.
- Recognize the need for, and have the ability to engage in independent and life-long learning.

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ANNA UNIVERSITY, CHENNAI

REGULATIONS – 2013

M.E. COMPUTER SCIENCE AND ENGINEERING

I TO IV SEMESTERS CURRICULA AND SYLLABI (FULL TIME)

SEMESTER I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA7155	Applied Probability and Statistics	3	1	0	4
2.	CP7101	Design and Management of Computer Networks	3	0	0	3
3.	CP7102	Advanced Data Structures and Algorithms	3	0	0	3
4.	CP7103	Multicore Architectures	3	0	0	3
5.		Elective I	3	0	0	3
6.		Elective II	3	0	0	3
PRACTICAL						
7.	CP7111	Advanced Data Structures Laboratory	0	0	4	2
8.	CP7112	Case Study - Network Design (Team Work)	0	0	2	1
		TOTAL	**18**	**1**	**6**	**22**

SEMESTER II

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CP7201	Theoretical Foundations of Computer Science	3	1	0	4
2.	CP7202	Advanced Databases	3	0	0	3
3.	CP7203	Principles of Programming Languages	3	0	0	3
4.	CP7204	Advanced Operating Systems	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
PRACTICAL						
7.	CP7211	Advanced Databases Laboratory	0	0	4	2
8.	CP7212	Case Study - Operating Systems Design (Team Work)	0	0	2	1
		TOTAL	**18**	**1**	**6**	**22**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CP7301	Software Process and Project Management	3	1	0	4
2.		Elective V	3	0	0	3
3.		Elective VI	3	0	0	3
4.		Elective VII	3	0	0	3
PRACTICAL						
5.	CP7311	Project Work (Phase I)	0	0	12	6
		TOTAL	**12**	**1**	**12**	**19**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1.	CP7411	Project Work (Phase II)	0	0	24	12
		TOTAL	**0**	**0**	**24**	**12**

TOTAL NO.OF CREDITS:75

LIST OF ELECTIVES

ELECTIVE I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	SE7103	Formal models of software systems	3	0	0	3
2.	CP7001	Performance Evaluation of Computer Systems	3	0	0	3
3.	CP7002	Probabilistic Reasoning Systems	3	0	0	3
4.	CP7003	Data Analysis and Business Intelligence	3	0	0	3
5.	CP7004	Image Processing and Analysis	3	0	0	3
6.	NE7001	Sensing Techniques and Sensors	3	0	0	3

ELECTIVE II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7005	Randomized Algorithms	3	0	0	3
2.	NE7002	Mobile and Pervasive Computing	3	0	0	3
3.	CP7006	Parallel Programming Paradigms	3	0	0	3
4.	CP7007	Software Requirements Engineering	3	0	0	3
5.	CP7008	Speech Processing and Synthesis	3	0	0	3
6.	CP7009	Machine Learning Techniques	3	0	0	3

ELECTIVE III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7010	Concurrency Models	3	0	0	3
2.	CP7011	Real Time Systems	3	0	0	3
3.	CP7012	Computer Vision	3	0	0	3
4.	NE7202	Network and Information Security	3	0	0	3
5.	CP7013	Design and Analysis of Parallel Algorithms	3	0	0	3
6.	CP7014	Software Architectures	3	0	0	3

ELECTIVE IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7015	Model Checking and Program Verification	3	0	0	3
2.	CP7016	Embedded Software Development	3	0	0	3
3.	IF7202	Cloud Computing	3	0	0	3
4.	CP7017	Data Visualization Techniques	3	0	0	3
5.	NE7005	Protocols and Architecture for Wireless Sensor Networks	3	0	0	3
6.	CP7018	Language Technologies	3	0	0	3

ELECTIVE V

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	NE7012	Social Network Analysis	3	0	0	3
2.	CP7019	Managing Big Data	3	0	0	3
3.	NE7011	Mobile Application Development	3	0	0	3
4.	CP7020	Bio-inspired Computing	3	0	0	3
5.	CP7021	Medical Image Processing	3	0	0	3
6.	CP7022	Software Design	3	0	0	3

ELECTIVE VI

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7023	Reconfigurable Computing	3	0	0	3
2.	IF7013	Energy Aware Computing	3	0	0	3
3.	CP7024	Information Retrieval Techniques	3	0	0	3
4.	CP7025	Data Mining Techniques	3	0	0	3
5.	IF7002	Bio Informatics	3	0	0	3
6.	CP7026	Software Quality Assurance	3	0	0	3

ELECTIVE VII

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CP7027	Multi Objective Optimization Techniques	3	0	0	3
2.	CP7028	Enterprise Application Integration	3	0	0	3
3.	CP7029	Information Storage Management	3	0	0	3
5.	CP7030	Robotics	3	0	0	3
6.	CP7031	Compiler Optimization Techniques	3	0	0	3

AFFILIATED INSTITUTIONS

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

R – 2013

PROGRAM EDUCATIONAL OBJECTIVES :

1. To prepare the students have successful career in industry and motivate for higher education.
2. To provide strong foundation in basic science and mathematics necessary to formulate, solve and analyze electrical and electronics problems
3. To provide strong foundation in circuit theory, field theory, control theory and signal processing concepts.
4. To provide good knowledge of Electrical power apparatus and their applications in power systems
5. To provide knowledge on basic electronics to power electronics and their applications in power engineering
6. To provide an opportunity to work in inter disciplinary groups
7. To promote student awareness for life long learning and inculcate professional ethics
8. To provide necessary foundation on computational platforms and software applications related to the respective field of engineering.

PROGRAM OUTCOMES :

a) Ability to understand and apply differential equations, integrals, matrix theory, probability theory and Laplace, Fourier and Z transformations for engineering problems
b) Ability to understand and apply basic science, circuit theory, Electro-magnetic field theory control theory and apply them to electrical engineering problems.
c) Ability to model and analyze electrical apparatus and their application to power system
d) Ability to understand and analyze power system operation, stability, control and protection.
e) Ability to handle the engineering aspects of electrical energy generation and utilization.
f) Ability to understand and analyse, linear and digital electronic circuits.
g) Ability to review, prepare and present technological developments
h) Ability to form a group and develop or solve engineering hardware and problems
i) To understand and apply computing platform and software for engineering problems.
j) To understand ethical issues, environmental impact and acquire management skills.

Program Educational Objective					**Program Outcome**					
	a	b	c	d	e	f	g	h	i	j
1		x		x		x	x		x	x
2	x									
3		x								
4				x						
5						x				
6								x		
7							x	x		
8						x			x	

ANNA UNIVERSITY, CHENNAI

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B. E. ELECTRICAL AND ELECTRONICS ENGINEERING

I TO VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English - I	3	1	0	4
2.	MA6151	Mathematics - I	3	1	0	4
3.	PH6151	Engineering Physics - I	3	0	0	3
4.	CY6151	Engineering Chemistry - I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICAL						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
			17	**2**	**11**	**26**

SEMESTER II

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English - II	3	1	0	4
2.	MA6251	Mathematics - II	3	1	0	4
3.	PH6251	Engineering Physics - II	3	0	0	3
4.	CY6251	Engineering Chemistry - II	3	0	0	3
5.	GE6251	Basic Civil and Mechanical Engineering	4	0	0	4
6.	EE6201	Circuit Theory	3	1	0	4
PRACTICAL						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	GE6263	Computer Programming Laboratory	0	1	2	2
9.	EE6211	Electric Circuits Laboratory	0	0	3	2
		TOTAL	**19**	**4**	**7**	**27**

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	EE6301	Digital Logic Circuits	3	1	0	4
3.	EE6302	Electromagnetic Theory	3	1	0	4
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	EC6202	Electronic Devices and Circuits	3	1	0	4
6.	EE6303	Linear Integrated Circuits and Applications	3	0	0	3
PRACTICAL						
7.	EC6361	Electronics Laboratory	0	0	3	2
8.	EE6311	Linear and Digital Integrated Circuits Laboratory	0	0	3	2
		TOTAL	**18**	**4**	**6**	**26**

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6459	Numerical Methods	3	1	0	4
2.	EE6401	Electrical Machines - I	3	1	0	4
3.	CS6456	Object Oriented Programming	3	0	0	3
4.	EE6402	Transmission and Distribution	3	0	0	3
5.	EE6403	Discrete Time Systems and Signal Processing	3	0	0	3
6.	EE6404	Measurements and Instrumentation	3	0	0	3
PRACTICAL						
7.	CS6461	Object Oriented Programming Laboratory	0	0	3	2
8.	EE6411	Electrical Machines Laboratory - I	0	0	3	2
		TOTAL	**18**	**2**	**6**	**24**

SEMESTER V

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6501	Power System Analysis	3	0	0	3
2.	EE6502	Microprocessors and Microcontrollers	3	0	0	3
3.	ME6701	Power Plant Engineering	3	0	0	3
4.	EE6503	Power Electronics	3	0	0	3
5.	EE6504	Electrical Machines - II	3	1	0	4
6.	IC6501	Control Systems	3	1	0	4
PRACTICAL						
7.	EE6511	Control and Instrumentation Laboratory	0	0	3	2
8.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
9.	EE6512	Electrical Machines Laboratory - II	0	0	3	2
		TOTAL	**18**	**2**	**10**	**26**

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6651	Communication Engineering	3	0	0	3
2.	EE6601	Solid State Drives	3	0	0	3
3.	EE6602	Embedded Systems	3	0	0	3
4.	EE6603	Power System Operation and Control	3	0	0	3
5.	EE6604	Design of Electrical Machines	3	1	0	4
6.		Elective - I	3	0	0	3
PRACTICAL						
7.	EE6611	Power Electronics and Drives Laboratory	0	0	3	2
8.	EE6612	Microprocessors and Microcontrollers Laboratory	0	0	3	2
9.	EE6613	Presentation Skills and Technical Seminar	0	0	2	1
		TOTAL	**18**	**1**	**8**	**24**

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6701	High Voltage Engineering	3	0	0	3
2.	EE6702	Protection and Switchgear	3	0	0	3
3.	EE6703	Special Electrical Machines	3	0	0	3
4.	MG6851	Principles of Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	EE6711	Power System Simulation Laboratory	0	0	3	2
8.	EE6712	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**5**	**21**

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6801	Electric Energy Generation, Utilization and Conservation	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	EE6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL CREDITS: 189

ELECTIVE - I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EE6001	Visual Languages and Applications	3	0	0	3
2.	IC6601	Advanced Control System	3	0	0	3
3.	EE6002	Power System Transients	3	0	0	3
4.	EE6003	Optimisation Techniques	3	0	0	3

ELECTIVE - II

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
5.	EI6703	Fibre Optics and Laser Instruments	3	0	0	3
6.	EI6704	Biomedical Instrumentation	3	0	0	3
7.	EE6004	Flexible AC Transmission Systems	3	0	0	3
8.	EE6005	Power Quality	3	0	0	3
9.	EE6006	Applied Soft Computing	3	0	0	3

ELECTIVE - III

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
10.	GE6081	Fundamentals of Nanoscience	3	0	0	3
11.	IC6002	System Identification and Adaptive Control	3	0	0	3
12.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
13.	EE6008	Microcontroller Based System Design	3	0	0	3

ELECTIVE - IV

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
14.	EE6009	Power Electronics for Renewable Energy Systems	3	0	0	3
15.	EE6010	High Voltage Direct Current Transmission	3	0	0	3
16.	EE6011	Power System Dynamics	3	0	0	3
17.	IC6003	Principles of Robotics	3	0	0	3
18.	GE6083	Disaster Management	3	0	0	3

ELECTIVE – V

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
19.	GE6075	Professional Ethics in Engineering	3	0	0	3
20.	GE6757	Total Quality Management	3	0	0	3
21.	EC6002	Advanced Digital Signal Processing	3	0	0	3
22.	EE6012	Computer Aided Design of Electrical Apparatus	3	0	0	3
23.	EC6601	VLSI Design	3	0	0	3
24.	GE6084	Human Rights	3	0	0	3
25.	MA6468	Probability and Statistics	3	1	0	4
26.	EI6001	Data Structures and Algorithms	3	0	0	3

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AFFILIATED INSTITUTIONS

R-2013

B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

I – VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	EC6201	Electronic Devices	3	0	0	3
6.	EE6201	Circuit Theory	3	1	0	4
PRACTICALS						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	EC6211	Circuits and Devices Laboratory	0	0	3	2
		TOTAL	**18**	**3**	**5**	**24**

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	EE6352	Electrical Engineering and Instrumentation	3	1	0	4
3.	EC6301	Object Oriented Programming and Data Structures	3	0	0	3
4.	EC6302	Digital Electronics	3	0	0	3
5.	EC6303	Signals and Systems	3	1	0	4
6.	EC6304	Electronic Circuits- I	3	1	0	4
PRACTICAL						
7.	EC6311	Analog and Digital Circuits Laboratory	0	0	3	2
8.	EC6312	OOPS and Data Structures Laboratory	0	0	3	2
		TOTAL	**18**	**4**	**6**	**26**

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6451	Probability and Random Processes	3	1	0	4
2.	EC6401	Electronic Circuits II	3	0	0	3
3.	EC6402	Communication Theory	3	0	0	3
4.	EC6403	Electromagnetic Fields	3	1	0	4
5.	EC6404	Linear Integrated Circuits	3	0	0	3
6.	EC6405	Control System Engineering	3	0	0	3
PRACTICAL						
7.	EC6411	Circuit and Simulation Integrated Laboratory	0	0	3	2
8.	EC6412	Linear Integrated Circuit Laboratory	0	0	3	2
9.	EE6461	Electrical Engineering and Control System Laboratory	0	0	3	2
		TOTAL	**18**	**2**	**9**	**26**

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6501	Digital Communication	3	0	0	3
2.	EC6502	Principles of Digital Signal Processing	3	1	0	4
3.	EC6503	Transmission Lines and Wave Guides	3	1	0	4
4.	GE6351	Environmental Science and Engineering	3	0	0	3
5.	EC6504	Microprocessor and Microcontroller	3	0	0	3
PRACTICAL						
6.	EC6511	Digital Signal Processing Laboratory	0	0	3	2
7.	EC6512	Communication System Laboratory	0	0	3	2
8.	EC6513	Microprocessor and Microcontroller Laboratory	0	0	3	2
		TOTAL	**15**	**2**	**9**	**23**

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	CS6303	Computer Architecture	3	0	0	3
3.	CS6551	Computer Networks	3	0	0	3
4.	EC6601	VLSI Design	3	0	0	3
5.	EC6602	Antenna and Wave propagation	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	EC6611	Computer Networks Laboratory	0	0	3	2
8.	EC6612	VLSI Design Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	**18**	**0**	**10**	**24**

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6701	RF and Microwave Engineering	3	0	0	3
2.	EC6702	Optical Communication and Networks	3	0	0	3
3.	EC6703	Embedded and Real Time Systems	3	0	0	3
4.		Elective II	3	0	0	3
5.		Elective III	3	0	0	3
6.		Elective IV	3	0	0	3
PRACTICAL						
7.	EC6711	Embedded Laboratory	0	0	3	2
8.	EC6712	Optical and Microwave Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**6**	**22**

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EC6801	Wireless Communication	3	0	0	3
2.	EC6802	Wireless Networks	3	0	0	3
3.		Elective V	3	0	0	3
4.		Elective VI	3	0	0	3
PRACTICAL						
5.	EC6811	Project Work	0	0	12	6
		TOTAL	**12**	**0**	**12**	**18**

TOTAL CREDITS:189

SEMESTER VI

ELECTIVE – I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	EC6001	Medical Electronics	3	0	0	3
2.	EC6002	Advanced Digital Signal Processing	3	0	0	3
3.	CS6401	Operating Systems	3	0	0	3
4.	EC6003	Robotics and Automation	3	0	0	3

SEMESTER VII

ELECTIVE– II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
5.	EC6004	Satellite Communication	3	0	0	3
6.	EC6005	Electronic Testing	3	0	0	3
7.	EC6006	Avionics	**3**	**0**	**0**	**3**
8.	CS6012	Soft Computing	3	0	0	3
9.	IT6005	Digital Image Processing	3	0	0	3
10.	CS6013	Foundation Skills in Integrated Product Development	3	0	0	3

ELECTIVE– III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
11.	EC6007	Speech Processing	3	0	0	3
12.	EC6008	Web Technology	3	0	0	3
13.	EC6009	Advanced Computer Architecture	3	0	0	3
14.	EC 6010	Electronics Packaging	3	0	0	3
15.	EC6011	Electro Magnetic Interference and Compatibility	3	0	0	3

ELECTIVE – IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
16.	EC6012	CMOS Analog IC Design	3	0	0	3
17.	EC6013	Advanced Microprocessors and Microcontrollers	3	0	0	3
18.	EC6014	Cognitive Radio	**3**	**0**	**0**	**3**
19.	EC6015	Radar and Navigational Aids	3	0	0	3
20.	EC6016	Opto Electronic Devices	3	0	0	3

SEMESTER VIII

ELECTIVE –V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
21.	EC6017	RF System Design	3	0	0	3
22.	CS6003	Ad hoc and Sensors Networks	3	0	0	3
23.	GE6082	Indian Constitution and Society	3	0	0	3
24.	EC6018	Multimedia Compression and Communication	3	0	0	3
25.	GE6075	Professional Ethics in Engineering	3	0	0	3
26.	GE6083	Disaster Management	3	0	0	3

ELECTIVE – VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
27.	EC6019	Data Converters	3	0	0	3
28.	CS6701	Cryptography and Network Security	3	0	0	3
29.	GE6757	Total Quality Management	3	0	0	3
30.	MG6071	Entrepreneurship Development	3	0	0	3
31.	MG6088	Software Project Management	3	0	0	3
32.	GE6084	Human Rights	3	0	0	3

AFFILIATED INSTITUTIONS

ANNA UNIVERSITY, CHENNAI

REGULATION – 2013

M.E. APPLIED ELECTRONICS

I TO IV SEMESTERS CURRICUM AND SYLLABUS (FULL TIME)

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	MA7157	Applied Mathematics for Electronics Engineers	3	1	0	4
2	AP7101	Advanced Digital Signal Processing	3	1	0	4
3	AP7102	Advanced Digital Logic System Design	3	0	0	3
4	AP7103	Advanced Microprocessor and Microcontroller	3	0	0	3
5		Elective I	3	0	0	3
6		Elective II	3	0	0	3
PRACTICAL						
1	AP7111	Electronics System Design Laboratory I	0	0	3	2
		TOTAL	**18**	**2**	**3**	**22**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	AP7201	Analysis and Design of Analog Integrated Circuits	3	0	0	3
2	AP7202	ASIC and FPGA Design	3	0	0	3
3	AP7203	Embedded Systems	3	0	0	3
4	CP7103	Multicore Architectures	3	0	0	3
5		Elective III	3	0	0	3
6		Elective IV	3	0	0	3
PRACTICAL						
1	AP7211	Electronics System Design Laboratory II	0	0	3	2
		TOTAL	**18**	**0**	**3**	**20**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	AP7301	Electromagnetic Interference and Compatibility	3	0	0	3
2		Elective V	3	0	0	3
3		Elective VI	3	0	0	3
PRACTICAL						
4	AP7311	Project Work (Phase I)	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1	AP7411	Project Work (Phase II)	0	0	24	12
		TOTAL	0	0	**24**	**12**

TOTAL NO. OF CREDITS: 69

LIST OF ELECTIVES

ELECTIVE I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	DS7201	Advanced Digital Image Processing	3	0	0	3
2	CU7006	Wavelet Transforms and Applications	3	0	0	3
3	IF7301	Soft Computing	3	0	0	3
4	AP7001	Computer Architecture and Parallel Processing	3	0	0	3
5	AP7002	Three Dimensional Network on Chip	3	0	0	3

ELECTIVE II

1	VL7201	CAD for VLSI Circuits	3	0	0	3
2	AP7003	Digital Control Engineering	3	0	0	3
3	AP7004	Hardware - Software Co Design	3	0	0	3
4	AP7005	Quantum Electronics	3	0	0	3
5	AP7006	Sensors and Signal Conditioning	3	0	0	3

ELECTIVE III

1	VL7102	VLSI Design Techniques	3	0	0	3
2	VL7202	Low Power VLSI Design	3	0	0	3
3	AP7007	Fiber Optic Sensors	3	0	0	3
4	AP7008	DSP Integrated Circuits	3	0	0	3
5	AP7009	RF System Design	3	0	0	3
6	VL7001	Analog and Mixed Mode VLSI Design	3	0	0	3

ELECTIVE IV

1	VL7006	Analog VLSI Design	3	0	0	3
2	VL7005	Physical Design of VLSI Circuits	3	0	0	3
3	VL7101	VLSI Signal Processing	3	0	0	3
4	AP7010	Data Converters	3	0	0	3
5	VL7103	Solid State Device Modeling and Simulation	3	0	0	3
6	NC7101	High Performance Networks	3	0	0	3

ELECTIVE V

1	VL7301	Testing of VLSI Circuits	3	0	0	3
2	VL7013	VLSI for Wireless Communication	3	0	0	3
3	AP7011	Photonics	3	0	0	3
4	AP7012	Nano Electronics	3	0	0	3
5	AP7013	Pattern Recognition	3	0	0	3
6	AP7014	Optical Computing	3	0	0	3

ELECTIVE VI

1	CP7030	Robotics	3	0	0	3
2	AP7015	Optical Imaging Techniques	3	0	0	3
3	CU7002	MEMS and NEMS	3	0	0	3
4	DS7301	Speech and Audio Signal Processing	3	0	0	3
5	AP7016	System on Chip Design	3	0	0	3
6	CP7023	Reconfigurable Computing	3	0	0	3
7	NC7202	Wireless Adhoc and Senor Networks	3	0	0	3

AFFILIATED INSTITUTIONS

B.E. ELECTRONICS AND INSTRUMENTATION ENGINEERING

R - 2013

PROGRAM EDUCATIONAL OBJECTIVES :

1. To prepare the students have successful career in industry and motivate for higher education.
2. To provide strong foundation in basic science and mathematics necessary to formulate, solve and analyze Electronics and Instrumentation problems
3. To provide strong foundation in circuit theory, control theory and signal processing concepts.
4. To provide good knowledge of Instrumentation systems and their applications.
5. To provide knowledge on basic electronics and their applications in Instrumentation engineering
6. To provide an opportunity to work in inter disciplinary groups
7. To promote student awareness for life long learning and inculcate professional ethics
8. To provide necessary foundation on computational platforms and software applications related to the respective field of engineering.

PROGRAM OUTCOMES :

a) Ability to understand and apply differential equations, integrals, matrix theory, probability theory and Laplace, Fourier and Z transformations for engineering problems
b) Ability to understand and apply basic science, circuit theory, control theory and signal processing concepts to engineering problems.
c) Ability to model and analyze transducers.
d) Ability to understand and analyze Instrumentation systems and their applications to various industries.
e) Ability to understand and analyse process control engineering problems.
f) Ability to understand and analyse, linear and digital electronic circuits.
g) Ability to review, prepare and present technological developments
h) Ability to form a group and develop or solve engineering hardware and problems
i) To understand and apply computing platform and software for engineering problems.
j) To understand ethical issues environmental impact and acquire management skills.

Program Educational Objective					**Program Outcome**					
	a	b	c	d	e	f	g	h	i	j
1		x		x		x	x		x	x
2	x									
3		x								
4				x						
5						x				
6								x		
7							x	x		
8						x			x	

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

R – 2013

B. E. ELECTRONICS AND INSTRUMENTATION ENGINEERING

I TO VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English - I	3	1	0	4
2.	MA6151	Mathematics - I	3	1	0	4
3.	PH6151	Engineering Physics - I	3	0	0	3
4.	CY6151	Engineering Chemistry - I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICAL						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
			17	**2**	**11**	**26**

SEMESTER II

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English - II	3	1	0	4
2.	MA6251	Mathematics - II	3	1	0	4
3.	PH6251	Engineering Physics - II	3	0	0	3
4.	CY6251	Engineering Chemistry - II	3	0	0	3
5.	GE6251	Basic Civil and Mechanical Engineering	4	0	0	4
6.	EE6201	Circuit Theory	3	1	0	4
PRACTICAL						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	GE6263	Computer Programming Laboratory	0	1	2	2
9.	EE6211	Electric Circuits Laboratory	0	0	3	2
		TOTAL	**19**	**4**	**7**	**27**

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	GE6351	Environmental Science and Engineering	3	0	0	3
3.	EE6301	Digital Logic Circuits	3	1	0	4
4.	EC6202	Electronic Devices and Circuits	3	1	0	4
5.	EE6303	Linear Integrated Circuits and Applications	3	0	0	3
6.	EI6301	Electrical Measurements	3	1	0	4
PRACTICAL						
7.	EC6361	Electronics Laboratory	0	0	3	2
8.	EE6311	Linear and Digital Integrated Circuits Laboratory	0	0	3	2
		TOTAL	**18**	**4**	**6**	**26**

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6459	Numerical Methods	3	1	0	4
2.	CS6456	Object Oriented Programming	3	0	0	3
3.	EI6401	Transducer Engineering	3	0	0	3
4.	EE6403	Discrete Time Systems and Signal Processing	3	0	0	3
5.	EI6402	Electrical Machines	3	1	0	4
6.	EI6403	Applied Thermodynamics and Fluid Dynamics	3	1	0	4
PRACTICAL						
7.	CS6461	Object Oriented Programming Laboratory	0	0	3	2
8.	EI6411	Electrical Machines Laboratory	0	0	3	2
		TOTAL	**18**	**3**	**6**	**25**

SEMESTER V

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6502	Microprocessors and Microcontrollers	3	0	0	3
2.	IC6501	Control Systems	3	1	0	4
3.	EE6503	Power Electronics	3	0	0	3
4.	EI6501	Analytical Instruments	3	0	0	3
5.	EI6502	Industrial Instrumentation – I	3	0	0	3
6.		Elective – I	3	0	0	3
PRACTICAL						
7.	EE6612	Microprocessors and Microcontrollers Laboratory	0	0	3	2
8.	EI6511	Transducers and Measurements Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
		TOTAL	**18**	**1**	**10**	**25**

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EI6601	Modern Electronic Instrumentation	3	0	0	3
2.	EI6602	Process Control	3	1	0	4
3.	EI6603	Industrial Instrumentation – II	3	0	0	3
4.	EC6651	Communication Engineering	3	0	0	3
5.	EE6602	Embedded Systems	3	0	0	3
6.		Elective –II	3	0	0	3
PRACTICAL						
7.	EI6611	Industrial Instrumentation Laboratory	0	0	3	2
8.	EI6612	Process Control Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**6**	**23**

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EI6701	Industrial Data Networks	3	0	0	3
2.	EI6702	Logic and Distributed Control System	3	0	0	3
3.	EC6601	VLSI Design	3	0	0	3
4.	EI6703	Fibre Optics and Laser Instruments	3	0	0	3
5.	EI6704	Biomedical Instrumentation	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	EC6612	VLSI Design Laboratory	0	0	3	2
8.	EI6711	Instrumentation System Design Laboratory	0	0	3	2
9.	EI6712	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**8**	**23**

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6851	Principles of Management	3	0	0	3
2.	EI6801	Computer Control of Processes	3	0	0	3
3.		Elective – IV	3	0	0	3
PRACTICAL						
4.	EI6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL CREDITS: 190

ELECTIVES - I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CS6659	Artificial Intelligence	3	0	0	3
2.	CS6303	Computer Architecture	3	0	0	3
3.	CS6401	Operating Systems	3	0	0	3
4.	EI6001	Data Structures and Algorithms	3	0	0	3

ELECTIVE – II

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
5.	EI6002	Power Plant Instrumentation	3	0	0	3
6.	EI6003	Instrumentation in Petrochemical Industries	3	0	0	3
7.	IT6005	Digital Image Processing	3	0	0	3
8.	IC6601	Advanced Control System	3	0	0	3
9.	EE6003	Optimisation Techniques	3	0	0	3

ELECTIVE - III

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
10.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
11.	EE6008	Microcontroller Based System Design	3	0	0	3
12.	EE6006	Applied Soft Computing	3	0	0	3
13.	IC6701	Digital Control System	3	0	0	3
14.	GE6081	Fundamentals of Nanoscience	3	0	0	3
15.	IC6002	System Identification and Adaptive Control	3	0	0	3
16.	GE6083	Disaster Management	3	0	0	3

ELECTIVE - IV

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
17.	GE6757	Total Quality Management	3	0	0	3
18.	GE6075	Professional Ethics in Engineering	3	0	0	3
19.	IC6003	Principles of Robotics	3	0	0	3
20.	EC6002	Advanced Digital Signal Processing	3	0	0	3
21.	GE6084	Human Rights	3	0	0	3

ANNA UNIVERSITY, CHENNAI

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R-2013

B.TECH INFORMATION TECHNOLOGY

I - VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	CS6201	Digital Principles and System Design	3	0	0	3
	CS6202	Programming and Data Structures I	3	0	0	3
PRACTICALS						
7.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
8.	IT6211	Digital Laboratory	0	0	3	2
9.	IT6212	Programming and Data Structures Laboratory I	0	0	3	2
		TOTAL	**18**	**2**	**8**	**25**

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CS6301	Programming and Data Structures II	3	0	0	3
3.	CS6302	Database Management Systems	3	0	0	3
4.	CS6303	Computer Architecture	3	0	0	3
5.	CS6304	Analog and Digital Communication	3	0	0	3
6.	GE6351	Environmental Science and Engineering	3	0	0	3
PRACTICAL						
7.	IT6311	Programming and Data Structures Laboratory II	0	0	3	2
8.	IT6312	Database Management Systems Laboratory	0	0	3	2
9.	IT6313	Digital Communication Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**9**	**25**

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6453	Probability and Queuing Theory	3	1	0	4
2.	EC6504	Microprocessor and Microcontroller	3	0	0	3
3.	CS6402	Design and Analysis of Algorithms	3	0	0	3
4.	CS6401	Operating Systems	3	0	0	3
5.	CS6403	Software Engineering	3	0	0	3
PRACTICAL						
6.	IT6411	Microprocessor and Microcontroller Laboratory	0	0	3	2
7.	IT6412	Operating Systems Laboratory	0	0	3	2
8.	IT6413	Software Engineering Laboratory	0	0	3	2
		TOTAL	**15**	**1**	**9**	**22**

SEMESTER V

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6551	Computer Networks	3	0	0	3
2.	IT6501	Graphics and Multimedia	3	0	0	3
3.	CS6502	Object Oriented Analysis and Design	3	0	0	3
4.	IT6502	Digital Signal Processing	3	1	0	4
5.	IT6503	Web Programming	3	1	0	4
6.	EC6801	Wireless Communication	3	0	0	3
PRACTICAL						
7.	IT6511	Networks Laboratory	0	0	3	2
8.	IT6512	Web Programming Laboratory	0	0	3	2
9.	IT6513	Case Tools Laboratory	0	0	3	2
		TOTAL	**18**	**2**	**9**	**26**

SEMESTER VI

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CS6601	Distributed Systems	3	0	0	3
2.	IT6601	Mobile Computing	3	0	0	3
3.	CS6659	Artificial Intelligence	3	0	0	3
4.	CS6660	Compiler Design	3	0	0	3
5.	IT6602	Software Architectures	3	0	0	3
6.		Elective I	3	0	0	3
PRACTICAL						
7.	IT6611	Mobile Application Development Laboratory	0	0	3	2
8.	IT6612	Compiler Laboratory	0	0	3	2
9.	GE6674	Communication and Soft Skills - Laboratory Based	0	0	4	2
		TOTAL	**18**	**0**	**10**	**24**

SEMESTER VII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	IT6701	Information Management	3	0	0	3
2.	CS6701	Cryptography and Network Security	3	0	0	3
3.	IT6702	Data Ware Housing and Data Mining	3	0	0	3
4.	CS6703	Grid and Cloud Computing	3	0	0	3
5.		Elective II	3	0	0	3
PRACTICAL						
6.	IT6711	Data Mining Laboratory	0	0	3	2
7.	IT6712	Security Laboratory	0	0	3	2
8.	IT6713	Grid and Cloud Computing Laboratory	0	0	3	2
		TOTAL	**15**	**0**	**9**	**21**

SEMESTER VIII

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	IT6801	Service Oriented Architecture	3	0	0	3
2.		Elective III	3	0	0	3
3.		Elective IV	3	0	0	3
		Elective V	3	0	0	3
PRACTICAL						
4.	IT6811	Project Work	0	0	12	6
		TOTAL	**12**	**0**	**12**	**18**

TOTAL NO. OF CREDITS: 187

LIST OF ELECTIVES

SEMESTER VI – ELECTIVE I

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IT6001	Advanced Database Technology	3	0	0	3
2.	IT6002	Information Theory and Coding Techniques	3	0	0	3
3.	CS6001	C# and .Net Programming	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.	CS6012	Soft Computing	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

SEMESTER VII – ELECTIVE II

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6003	Multimedia Compression Techniques	3	0	0	3
2.	IT6004	Software Testing	3	0	0	3
3.	IT6005	Digital Image Processing	3	0	0	3
4.	CS6003	Ad hoc and Sensor Networks	3	0	0	3
5.	IT6006	Data Analytics	3	0	0	3

SEMESTER VIII – ELECTIVE III

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6007	Free and Open Source Software	3	0	0	3
2.	IT6008	Network Programming and Management	3	0	0	3
3.	GE6075	Professional Ethics in Engineering	3	0	0	3
4.	CS6503	Theory of Computation	3	0	0	3
5.	IT6009	Web Engineering	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3

SEMESTER VIII – ELECTIVE IV

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	BM6005	Bio Informatics	3	0	0	3
2.	CS6004	Cyber Forensics	3	0	0	3
3.	CS6702	Graph Theory and Applications	3	0	0	3
4.	CS6010	Social Network Analysis	3	0	0	3
5.	IT6010	Business Intelligence	3	0	0	3
6.	CS6013	Foundation Skills in Integrated Product Development	3	0	0	3

SEMESTER VIII - ELECTIVE V

S.NO.	CODE NO.	COURSE TITLE	L	T	P	C
1.	IT6011	Knowledge Management	3	0	0	3
2.	IT6012	TCP/ IP Design and Implementation	3	0	0	3
3.	CS6008	Human Computer Interaction	3	0	0	3
4.	IT6013	Software Quality Assurance	3	0	0	3
5.	MG6088	Software Project Management	3	0	0	3

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B.E. MECHANICAL ENGINEERING

I – VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6151	Technical English – I	3	1	0	4
2.	MA6151	Mathematics – I	3	1	0	4
3.	PH6151	Engineering Physics – I	3	0	0	3
4.	CY6151	Engineering Chemistry – I	3	0	0	3
5.	GE6151	Computer Programming	3	0	0	3
6.	GE6152	Engineering Graphics	2	0	3	4
PRACTICALS						
7.	GE6161	Computer Practices Laboratory	0	0	3	2
8.	GE6162	Engineering Practices Laboratory	0	0	3	2
9.	GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
		TOTAL	**17**	**2**	**11**	**26**

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	HS6251	Technical English – II	3	1	0	4
2.	MA6251	Mathematics – II	3	1	0	4
3.	PH6251	Engineering Physics – II	3	0	0	3
4.	CY6251	Engineering Chemistry – II	3	0	0	3
5.	GE6252	Basic Electrical and Electronics Engineering	4	0	0	4
6.	GE6253	Engineering Mechanics	3	1	0	4
PRACTICALS						
7.	GE6261	Computer Aided Drafting and Modeling Laboratory	0	1	2	2
8.	GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
		TOTAL	**19**	**4**	**4**	**25**

SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6351	Transforms and Partial Differential Equations	3	1	0	4
2.	CE6306	Strength of Materials	3	1	0	4
3.	ME6301	Engineering Thermodynamics	3	0	0	3
4.	CE6451	Fluid Mechanics and Machinery	3	0	0	3
5.	ME6302	Manufacturing Technology - I	3	0	0	3
6.	EE6351	Electrical Drives and Controls	3	0	0	3
PRACTICAL						
7.	ME6311	Manufacturing Technology Laboratory - I	0	0	3	2
8.	CE6461	Fluid Mechanics and Machinery Laboratory	0	0	3	2
9.	EE6365	Electrical Engineering Laboratory	0	0	3	2
		TOTAL	**18**	**2**	**9**	**26**

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA6452	Statistics and Numerical Methods	3	1	0	4
2.	ME6401	Kinematics of Machinery	3	0	0	3
3.	ME6402	Manufacturing Technology– II	3	0	0	3
4.	ME6403	Engineering Materials and Metallurgy	3	0	0	3
5.	GE6351	Environmental Science and Engineering	3	0	0	3
6.	ME6404	Thermal Engineering	3	0	0	3
PRACTICAL						
7.	ME6411	Manufacturing Technology Laboratory–II	0	0	3	2
8.	ME6412	Thermal Engineering Laboratory - I	0	0	3	2
9.	CE6315	Strength of Materials Laboratory	0	0	3	2
		TOTAL	**18**	**1**	**9**	**25**

SEMESTER V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6501	Computer Aided Design	3	0	0	3
2.	ME6502	Heat and Mass Transfer	3	0	0	3
3.	ME6503	Design of Machine Elements	3	0	0	3
4.	ME6504	Metrology and Measurements	3	0	0	3
5.	ME6505	Dynamics of Machines	3	0	0	3
6.	GE6075	Professional Ethics in Engineering	3	0	0	3
PRACTICAL						
7.	ME6511	Dynamics Laboratory	0	0	3	2
8.	ME6512	Thermal Engineering Laboratory-II	0	0	3	2
9.	ME6513	Metrology and Measurements Laboratory	0	0	3	2
		TOTAL	**18**	**0**	**9**	**24**

SEMESTER VI

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6601	Design of Transmission Systems	3	0	0	3
2.	MG6851	Principles of Management	3	0	0	3
3.	ME6602	Automobile Engineering	3	0	0	3
4.	ME6603	Finite Element Analysis	3	0	0	3
5.	ME6604	Gas Dynamics and Jet Propulsion	3	0	0	3
6.		Elective - I	3	0	0	3
PRACTICAL						
7.	ME6611	C.A.D. / C.A.M. Laboratory	0	0	3	2
8.	ME6612	Design and Fabrication Project	0	0	4	2
9.	GE6674	Communication and Soft Skills- Laboratory Based	0	0	4	2
		TOTAL	**18**	**0**	**11**	**24**

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	ME6701	Power Plant Engineering	3	0	0	3
2.	ME6702	Mechatronics	3	0	0	3
3.	ME6703	Computer Integrated Manufacturing Systems	3	0	0	3
4.	GE6757	Total Quality Management	3	0	0	3
5.		Elective – II	3	0	0	3
6.		Elective – III	3	0	0	3
PRACTICAL						
7.	ME6711	Simulation and Analysis Laboratory	0	0	3	2
8.	ME6712	Mechatronics Laboratory	0	0	3	2
9.	ME6713	Comprehension	0	0	2	1
		TOTAL	**18**	**0**	**8**	**23**

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MG6863	Engineering Economics	3	0	0	3
2.		Elective – IV	3	0	0	3
3.		Elective – V	3	0	0	3
PRACTICAL						
4.	ME6811	Project Work	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 188

ELECTIVES FOR B.E. MECHANICAL ENGINEERING

SEMESTER VI

Elective I

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MG6072	Marketing Management	3	0	0	3
2.	ME6001	Quality Control and Reliability Engineering	3	0	0	3
3.	ME6002	Refrigeration and Air conditioning	3	0	0	3
4.	ME6003	Renewable Sources of Energy	3	0	0	3
5.	ME6004	Unconventional Machining Processes	3	0	0	3

SEMESTER VII

Elective II

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6005	Process Planning and Cost Estimation	3	0	0	3
2.	ME6006	Design of Jigs, Fixtures and Press Tools	3	0	0	3
3.	ME6007	Composite Materials and Mechanics	3	0	0	3
4.	ME6008	Welding Technology	3	0	0	3
5.	ME6009	Energy Conservation and Management	3	0	0	3
6.	GE6083	Disaster Management	3	0	0	3

Elective III

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6010	Robotics	3	0	0	3
2.	GE6081	Fundamentals of Nanoscience	3	0	0	3
3.	ME6011	Thermal Turbo Machines	3	0	0	3
4.	ME6012	Maintenance Engineering	3	0	0	3
5.	EE6007	Micro Electro Mechanical Systems	3	0	0	3
6.	ME6021	Hydraulics and Pneumatics	3	0	0	3

SEMESTER-VIII

Elective IV

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	IE6605	Production Planning and Control	3	0	0	3
2.	MG6071	Entrepreneurship Development	3	0	0	3
3.	ME6013	Design of Pressure Vessels and Piping	3	0	0	3
4.	ME6014	Computational Fluid Dynamics	3	0	0	3
5.	ME6015	Operations Research	3	0	0	3
6.	GE6084	Human Rights	3	0	0	3

Elective V

SL. NO.	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ME6016	Advanced I.C. Engines	3	0	0	3
2.	ME6017	Design of Heat Exchangers	3	0	0	3
3.	ME6018	Additive Manufacturing	3	0	0	3
4.	ME6019	Non Destructive Testing and Materials	3	0	0	3
5.	ME6020	Vibration and Noise Control	3	0	0	3

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M.E. CAD / CAM

I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA7169	Advanced Numerical Methods	3	1	0	4
2.	ED7102	Computer Application in Design	3	0	2	4
3.	ED7204	Integrated Mechanical Design	3	1	0	4
4.	CM7201	Competitive Manufacturing Systems	3	0	0	3
5.	CC7101	Finite Element Applications in Manufacturing Engineering	3	1	0	4
6.		Elective I	3	0	0	3
PRACTICAL						
7.	CC7111	CAD / CAE Laboratory	0	0	2	1
		TOTAL	**18**	**3**	**4**	**23**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	CC7201	Design for Manufacture, Assembly and Environments	3	0	0	3
2.	CM7001	Additive Manufacturing	3	0	0	3
3.	CM7202	Applied Materials Engineering	3	0	0	3
4.	CC7202	Integrated Product and Process Development	3	1	0	4
5.		Elective II	3	0	0	3
6.		Elective III	3	0	0	3
PRACTICAL						
7.	CC7211	CAM Laboratory	0	0	2	1
8.	CC7212	Design Project	0	0	3	2
		TOTAL	**18**	**1**	**5**	**22**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.		Elective IV	3	0	0	3
2.		Elective V	3	0	0	3
3.		Elective VI	3	0	0	3
PRACTICAL						
4.	CC7311	Project Work (Phase I)	0	0	12	6
		TOTAL	**9**	**0**	**12**	**15**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1.	CC7411	Project Work (Phase II)	0	0	24	12
		TOTAL	**0**	**0**	**24**	**12**

TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE: 72

LIST OF ELECTIVES FOR M.E. CAD / CAM

SEMESTER I (Elective I)

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1	CC7001	Computer Control in Process Planning	3	0	0	3
2	ED7001	Optimization Techniques in Design	3	0	0	3
3	ED7101	Advanced Mechanics of Materials	3	0	0	3
4	ED7005	Design of Material Handling Equipments	3	0	0	3

SEMESTER II (Elective II & III)

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	CC7002	Mechatronics Applications in Manufacturing	3	0	0	3
2.	CC7003	Industrial Safety Management	3	0	0	3
3.	CD7003	Advanced Tool Design	3	0	0	3
4.	ED7202	Mechanisms Design and Simulation	3	0	0	3
5.	IC7072	Computational Fluid Dynamics	3	0	0	3
6.	CC7004	Reliability in Engineering Systems	3	0	0	3
7.	ED7071	Industrial Robotics and Expert Systems	3	0	0	3

SEMESTER III (Elective IV, V & VI)

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	ED7004	Design of Hydraulic and Pneumatic Systems	3	0	0	3
2.	CC7005	Data Communication in CAD/CAM	3	0	0	3
3.	CC7006	Performance Modelling and Analysis of Manufacturing System	3	0	0	3
4.	ED7010	Tribology in Design	3	0	0	3
5.	CC7007	Metrology and Non Destructive Testing	3	0	0	3
6.	CC7008	Quality Management Techniques	3	0	0	3
7.	CC7009	Design for Cellular Manufacturing Systems	3	0	0	3

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

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B. TECH. TEXTILE TECHNOLOGY

PROGRAMME OBJECTIVES:

- Prepare the students to demonstrate technical competence in their profession by applying knowledge of basic and contemporary science, engineering and experimentation skills for identifying manufacturing problems and providing practical and innovative solutions.
- Prepare the students to understand the professional and ethical responsibilities in the local and global context and hence utilize their knowledge and skills for the benefit of the society.
- Enable the students to work successfully in a manufacturing environment and function well as a team member and also exhibit continuous improvement in their understanding of their technical specialization through self learning and the skill to apply it to further research and development.
- Enable the students to have sound education in selected subjects essential to develop their ability to initiate and conduct independent investigations.
- Develop comprehensive understanding in the area of textile manufacture, which includes fibre, yarn and fabric through course work, practical training and independent study.

PROGRAMME OUTCOMES:

The students will be able to

- Apply knowledge of mathematics, science and engineering in textile production processes
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- Function on multidisciplinary teams
- Identify, formulate, and solve engineering problems related to textile production processes
- Understand the professional and ethical responsibility
- Prepare technical documents and present effectively
- Use the techniques, skills, and modern engineering tools necessary for practicing in the textile manufacturing industry.
- Build high moral character

ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

R - 2013

B. TECH. TEXTILE TECHNOLOGY

I – VIII SEMESTERS CURRICULUM AND SYLLABUS

SEMESTER - I

CODE	COURSE TITLE	L	T	P	C
THEORY					
HS6151	Technical English - I	3	1	0	4
MA6151	Mathematics – I	3	1	0	4
PH6151	Engineering Physics – I	3	0	0	3
CY6151	Engineering Chemistry – I	3	0	0	3
GE6151	Computer Programming	3	0	0	3
GE6152	Engineering Graphics	2	0	3	4
PRACTICAL					
GE6161	Computer Practices Laboratory	0	0	3	2
GE6162	Engineering Practices Laboratory	0	0	3	2
GE6163	Physics and Chemistry Laboratory - I	0	0	2	1
	TOTAL	**17**	**2**	**11**	**26**

SEMESTER – II

CODE	COURSE TITLE	L	T	P	C
THEORY					
HS6251	Technical English - II	3	1	0	4
MA6251	Mathematics - II	3	1	0	4
PH6251	Engineering Physics - II	3	0	0	3
CY6251	Engineering Chemistry - II	3	0	0	3
GE6252	Basic Electrical and Electronics Engineering	4	0	0	4
GE6253	Engineering Mechanics	3	1	0	4
PRACTICAL					
GE6261	Computer Aided Drafting and Modeling Laboratory	0	1	2	2
GE6262	Physics and Chemistry Laboratory - II	0	0	2	1
GE6263	Computer Programming Laboratory	0	1	2	2
		19	**5**	**6**	**27**

SEMESTER – III

CODE	COURSE TITLE	L	T	P	C
THEORY					
MA6468	Probability and statistics	3	1	0	4
GE6351	Environmental Science and Engineering	3	0	0	3
TT6301	Characteristics of Textile Fibres I	3	0	0	3
TT6302	Polymer Science	3	0	0	3
TT6303	Technology of Pre Weaving Process	3	0	0	3
TT6304	Technology of Pre Spinning Process	3	0	0	3
PRACTICALS					
TT6311	Fibre Science Lab	0	0	3	2
TT6312	Spinning Process Lab – I	0	0	3	2
	TOTAL	**18**	**1**	**6**	**23**

SEMESTER – IV

CODE NO.	COURSE TITLE	L	T	P	C
THEORY					
MA6459	Numerical Methods	3	1	0	4
CE6460	Solid Mechanics	3	0	0	3
TT6401	Characteristics of Textile Fibres – II	3	0	0	3
TT6402	Fabric Structure	3	0	0	3
TT6403	Technology of Yarn Spinning	3	0	0	3
TT6404	Technology of Woven Fabric Manufacture	3	1	0	4
PRACTICALS					
TT6461	Fabric Structure Laboratory	0	0	3	2
TT6412	Spinning Process Lab – II	0	0	3	2
	TOTAL	**18**	**2**	**6**	**24**

SEMESTER – V

CODE NO.	COURSE TITLE	L	T	P	C
THEORY					
TT6501	Process Control in Spinning	3	0	0	3
TT6502	Quality Evaluation of Fibres and Yarns	3	0	0	3
TT6503	Knitting Technology	3	1	0	4
TT6504	Chemical Processing of Textile Materials - I	3	0	0	3
TT6505	Technology of Manufactured Fibre Production	3	0	0	3
PRACTICALS					
GE6674	Communication and Soft Skills – Laboratory Based	0	0	4	2
TT6511	Fabric Manufacture Lab	0	0	3	2
TT6512	Fibre and yarn quality evaluation Lab	0	0	3	2
	TOTAL	**15**	**1**	**10**	**22**

SEMESTER – VI

CODE	COURSE TITLE	L	T	P	C
THEORY					
TT6601	Fabric Quality Evaluation	3	0	0	3
TT6602	Financial Management for Textile and Apparel Industries	3	0	0	3
TT6603	Technology of Bonded Fabrics	3	0	0	3
TT6604	Mechanics of Textile Machinery	3	0	0	3
TT6605	Chemical Processing of Textile Materials - II	3	0	0	3
TT6606	Garment Manufacturing Technology	3	1	0	4
PRACTICALS					
TT6611	Fabric Quality Evaluation Lab	0	0	3	2
TT6612	Textile Chemical Processing Lab	0	0	3	2
	TOTAL	**18**	**1**	**6**	**23**

SEMESTER – VII

CODE	COURSE TITLE	L	T	P	C
THEORY					
TT6701	Total Quality Management for Textile Industry	3	0	0	3
TT6702	Operations Research for Textile Industry	3	0	0	3
TT6703	Clothing comfort	3	0	0	3
TT6704	Structural Mechanics of Fabrics	2	0	0	2
TT6705	Structural Mechanics of Yarns	2	0	0	2
	Elective – I	3	0	0	3
	TOTAL	**16**	**0**	**0**	**16**

SEMESTER – VIII

CODE NO.	COURSE TITLE	L	T	P	C
THEORY					
	Elective II	3	0	0	3
	Elective III	3	0	0	3
PRACTICALS					
TT6811	Project Work	0	0	12	6
	TOTAL	**6**	**0**	**12**	**12**

TOTAL NO OF CREDITS : 173

LIST OF ELECTIVES

B. TECH. TEXTILE TECHNOLOGY

ELECTIVE I

CODE NO.	COURSE TITLE	L	T	P	C
GE6075	Professional Ethics in Engineering	3	0	0	3
TT6001	High Performance Fibres	3	0	0	3
TT6002	Characterisation of Polymers	3	0	0	3
GE6083	Disaster Management	3	0	0	3

ELECTIVE II

CODE NO.	COURSE TITLE	L	T	P	C
FT6605	Industrial Engineering in Apparel Industry	3	0	0	3
TT6004	Apparel Production machinery	3	0	0	3
FT6606	Apparel Marketing and Merchandising	3	0	0	3
GE6084	Human Rights	3	0	0	3

ELECTIVE – III

CODE NO.	COURSE TITLE	L	T	P	C
TT6006	Supply Chain Management for Textile Industry	3	0	0	3
TT6007	Medical Textiles	3	0	0	3
TT6008	Textile Reinforced Composites	3	0	0	3

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CURRICULUM I TO IV SEMESTERS (FULL TIME)

M.TECH. TEXTILE TECHNOLOGY

SEMESTER I

COURSE CODE	COURSE TITLE	L	T	P	C
THEORY					
TX7101	Theory of short staple yarn spinning	4	0	0	4
TX7102	Process Control and Fabric Engineering	4	0	0	4
TX7103	Textile Quality Evaluation	4	0	0	4
TX7104	Fibre Physics	4	0	0	4
TX7105	Functional Finishes	4	0	0	4
	TOTAL	**20**	**0**	**0**	**20**

SEMESTER II

COURSE CODE	COURSE TITLE	L	T	P	C
THEORY					
TX7201	Statistics for Textile Engineering	3	1	0	4
TX7202	Clothing Science	4	0	0	4
	Elective I	4	0	0	4
	Elective II	4	0	0	4
	Elective III	4	0	0	4
	TOTAL	**19**	**1**	**0**	**20**

SEMESTER III

COURSE CODE	COURSE TITLE	L	T	P	C
THEORY					
	Elective IV	4	0	0	4
	Elective V	4	0	0	4
PRACTICAL					
TX7311	Project Work (Phase I)	0	0	12	6
	TOTAL	**8**	**0**	**12**	**14**

SEMESTER IV

COURSE CODE	COURSE TITLE	L	T	P	C
THEORY					
TX7411	Project Work (Phase II)	0	0	24	12
	TOTAL	**0**	**0**	**24**	**12**

TOTAL NUMBER OF CREDITS : 66

LIST OF ELECTIVES

M.TECH. TEXTILE TECHNOLOGY

SEMESTER – II

COURSE CODE	COURSE TITLE	L	T	P	C
TX7001	Theory of Yarn Structures	4	0	0	4
TX7002	Structure and Properties of Fabrics	4	0	0	4
TX7003	Management of Research and Development	4	0	0	4
TX7004	Enzyme Technology for Textile Processing	4	0	0	4
TX7005	Management of Textile Effluents	4	0	0	4
TX7006	Textile Polymer Rheology	4	0	0	4
TX7007	Textile Structural Composites	4	0	0	4

SEMESTER - III

COURSE CODE	COURSE TITLE	L	T	P	C
TX7008	Alternative Spinning Systems	4	0	0	4
TX7009	Design and Analysis of Textile Experiments	4	0	0	4
TX7010	Colour Science and its Applications	4	0	0	4
TX7011	Characterization of Textile Polymers	4	0	0	4
TX7012	Textiles in Civil Construction and Transportation	4	0	0	4
TX7013	Medical Textiles	4	0	0	4

AFFILIATED INSTITUTIONS

ANNA UNIVERSITY: : CHENNAI 600 025

REGULATIONS - 2013

I TO IV SEMESTERS (FULL TIME) CURRICULUM AND SYLLABUS

MASTER OF BUSINESS ADMINISTRATION (MBA)

SEMESTER – I

SL.NO.	CODE NO.	COURSE TITLE	L	T	P	C
THEORY						
1.	BA7101	Principles of Management	3	0	0	3
2.	BA7102	Statistics for Management	3	1	0	4
3.	BA7103	Economic Analysis for Business	4	0	0	4
4.	BA7104	Total Quality Management	3	0	0	3
5.	BA7105	Organizational Behaviour	3	0	0	3
6.	BA7106	Accounting for Management	3	1	0	4
7.	BA7107	Legal Aspects of Business	3	0	0	3
8.	BA7108	Written Communication	3	0	0	3
		TOTAL	**25**	**2**	**0**	**27**

SEMESTER – II

SL.NO.	CODE NO.	COURSE TITLE	L	T	P	C
THEORY						
1.	BA7201	Operations Management	3	0	0	3
2.	BA7202	Financial Management	3	0	0	3
3.	BA7203	Marketing Management	4	0	0	4
4.	BA7204	Human Resource Management	3	0	0	3
5.	BA7205	Information Management	3	0	0	3
6.	BA7206	Applied Operations Research	3	1	0	4
7.	BA7207	Business Research Methods	3	0	0	3
PRACTICAL						
8.	BA7211	Data Analysis and Business Modeling	0	0	4	2
		TOTAL	**22**	**1**	**4**	**25**

SUMMER SEMESTER (4 WEEKS)

SUMMER TRAINING

Summer Training – The training report along with the company certificate should be submitted within the two weeks of the reopening date of 3rd semester. The training report should be around 40 pages containing the details of training undergone, the departments wherein he was trained with duration (chronological diary), along with the type of managerial skills developed during training. The training report should be sent to the Controller of Examinations by the HOD through the Principal, before the last working day of the 3rd Semester.

SEMESTER – III

SL.NO.	CODE NO.	COURSE TITLE	L	T	P	C
THEORY						
1.	BA7301	Enterprise Resource Planning	3	0	0	3
2.	BA7302	Strategic Management	3	0	0	3
3.	E1	Elective I	3	0	0	3
4.	E2	Elective II	3	0	0	3
5.	E3	Elective III	3	0	0	3
6.	E4	Elective IV	3	0	0	3
7.	E5	Elective V	3	0	0	3
8.	E6	Elective VI	3	0	0	3
PRACTICAL						
9.	BA7311	Professional Skill Development	0	0	4	2
10.	BA7312	Summer Training	0	0	2	1
		TOTAL	**24**	**0**	**6**	**27**

SEMESTER – IV

SL.NO.	CODE NO.	COURSE TITLE	L	T	P	C
THEORY						
1.	BA7401	International Business Management	3	0	0	3
2.	BA7402	Business Ethics, Corporate Social Responsibility and Governance	3	0	0	3
PRACTICAL						
3.	BA7411	Creativity and Innovation	0	0	4	2
4.	BA7412	Project Work	0	0	18	9
		TOTAL	**6**	**0**	**22**	**17**

TOTAL NUMBEROF CREDITS = 96

LIST OF ELECTIVES

MASTER OF BUSINESS ADMINISTRATION (MBA)

SL.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
	MARKETING – ELECTIVES					
1	BA7011	Brand Management	3	0	0	3
2	BA7012	Retail Management	3	0	0	3
3	BA7013	Services Marketing	3	0	0	3
4	BA7014	Integrated Marketing Communication	3	0	0	3
5	BA7015	Customer Relationship Management	3	0	0	3
6	BA7016	Rural Marketing	3	0	0	3
	FINANCE – ELECTIVES					
1	BA7021	Security Analysis and Portfolio Management	3	0	0	3
2	BA7022	Merchant Banking and Financial Services	3	0	0	3
3	BA7023	International Trade Finance	3	0	0	3
4	BA7024	Corporate Finance	3	0	0	3
5	BA7025	Micro Finance	3	0	0	3
6	BA7026	Banking Financial Services Management	3	0	0	3
	HUMAN RESOURCE – ELECTIVES					
1	BA7031	Managerial Behavior and Effectiveness	3	0	0	3
2	BA7032	Entrepreneurship Development	3	0	0	3
3	BA7033	Organizational Theory, Design & Development	3	0	0	3
4	BA7034	Industrial Relations & Labour Welfare	3	0	0	3
5	BA7035	Labour Legislations	3	0	0	3
6	BA7036	Strategic Human Resource Management	3	0	0	3
	SYSTEMS - ELECTIVES					
1	BA7041	Advanced Database Management Systems	3	0	0	3
2	BA7042	e-Business Management	3	0	0	3
3	BA7043	Software Project and Quality Management	3	0	0	3
4	BA7044	Datamining for Business Intelligence	3	0	0	3
	OPERATIONS – ELECTIVES					
1	BA7051	Logistics and Supply Chain Management	3	0	0	3
2	BA7052	Services Operations Management	3	0	0	3
3	BA7053	Project Management	3	0	0	3
4	BA7054	Lean Six Sigma	3	0	0	3
	SHIPPING AND LOGISTICS MANAGEMENT- ELECTIVES					
1.	BA7061	Containerization and Allied Business	3	0	0	3
2.	BA7062	Exim Management	3	0	0	3
3.	BA7063	Fundamentals of Shipping	3	0	0	3
4.	BA7064	Port and Terminal Management	3	0	0	3

Note: Three electives from two specializations from among the 5 areas of specialization are to be chosen by the students

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS

REGULATIONS - 2013

CURRICULUM AND SYLLABUS I TO VI SEMESTERS (FULL TIME)

MASTER OF COMPUTER APPLICATION

PROGRAMME EDUCATIONAL OBJECTIVES

I. To excel in problem solving and programming skills in the various computing fields of IT industries
II. To develop the ability to plan, analyze, design, code, test, implement & maintain a software product for real time system
III. To promote students capability to set up their own enterprise in various sectors of Computer applications
IV. To experience the students in finding solutions and developing system based applications for real time problems in various domains involving technical, managerial, economical & social constraints
V. To prepare the students to pursue higher studies in computing or related disciplines and to work in the fields of teaching and research.

PROGRAMME OBJECTIVES

a) Understand and Apply mathematical foundation, computing and domain knowledge for the conceptualization of computing model of problems.
b) Identify, Analyze the computing requirements of a problem and Solve them using computing principles.
c) Design and Evaluate a computer based system, components and process to meet the specific needs of applications.
d) Use current techniques and tools necessary for complex computing practices.
e) Use suitable architecture or platform on design and implementation with respect to performance
f) Develop and integrate effectively system based components into user environment.
g) Understand and commit to Cyber regulations and responsibilities in Professional computing practices.
h) Recognize the need for and develop the ability to engage in continuous learning as a Computing professional.
i) Apply the understanding of management principles with computing knowledge to manage the projects in multidisciplinary environments.
j) Communicate effectively with the computing community as well as society by being able to comprehend effective documentations and presentations.
k) Understand societal, environmental, health, legal, ethical issues within local and global contexts and the consequential responsibilities relevant to professional practice.
l) Function effectively in a team environment to accomplish a common goal.
m) Identify opportunities and use innovative ideas to create value and wealth for the betterment of the individual and society.
n) Use knowledge to analyze, interpret the data and synthesis the information to derive valid conclusions using research methods.
o) Expertise in developing application with required domain knowledge.

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ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

REGULATIONS - 2013

CURRICULUM I TO VI SEMESTERS (FULL TIME)

MASTER OF COMPUTER APPLICATION

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA7151	Mathematical Foundation for Computer Applications	3	1	0	4
2.	MC7101	Computer Organization	3	0	0	3
3.	MC7102	Problem Solving and Programming	3	0	0	3
4.	MC7103	Database Management Systems	3	0	0	3
5.	MC7104	Data Structures and Algorithms	3	1	0	4
PRACTICAL						
6.	MC7111	DBMS Laboratory	0	0	3	2
7.	MC7112	Data Structures and Algorithms Laboratory	0	0	3	2
8.	MC7113	Communication Skill Laboratory	1	0	2	2
		TOTAL	**16**	**2**	**8**	**23**

SEMESTER II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MC7201	Object Oriented Programming	3	0	0	3
2.	MC7202	Web Programming Essentials	3	0	0	3
3.	MC7203	System Software	3	0	0	3
4.	MC7204	Operating Systems	3	0	0	3
5.	MC7205	Computer Graphics and Multimedia	3	0	0	3
PRACTICAL						
6.	MC7211	Object Oriented Programming Laboratory	0	0	3	2
7.	MC7212	Web Programming Laboratory	0	0	3	2
8.	MC7213	Graphics and Multimedia Laboratory	0	0	3	2
		TOTAL	**15**	**0**	**9**	**21**

SEMESTER III

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MC7301	Computer Networks	3	0	0	3
2.	MC7302	Embedded Systems	3	0	0	3
3.	MC7303	Software Engineering	3	0	0	3
4.	MC7304	Professional Ethics	3	0	0	3
5.	MC7305	Internet Programming	3	0	0	3
PRACTICAL						
6.	MC7311	Embedded Systems Laboratory	0	0	3	2
7.	MC7312	Internet Programming Laboratory	0	0	3	2
8.	MC7313	Visual Programming Laboratory	1	0	3	2
		TOTAL	**16**	**0**	**9**	**21**

SEMESTER IV

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MC7401	Resource Management Techniques	3	0	0	3
2.	MC7402	Object Oriented Analysis and Design	3	0	0	3
3.	MC7403	Data Warehousing and Data Mining	3	0	0	3
4.	MC7404	Network Programming	3	0	0	3
5.		Elective I	3	0	0	3
PRACTICAL						
6.	MC7411	Software Development- Case Tools Laboratory	0	0	3	2
7.	MC7412	Network Programming Laboratory	0	0	3	2
8.	MC7413	Technical Seminar and Report Writing	0	0	3	2
		TOTAL	**15**	**0**	**9**	**21**

SEMESTER V

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MC7501	Web Application Development	3	0	0	3
2.	MC7502	Service Oriented Architecture	3	0	0	3
3.	MC7503	Mobile computing	3	0	0	3
4.		Elective II	3	0	0	3
5.		Elective III	3	0	0	3
PRACTICAL						
6.	MC7511	Advanced Internet Programming Laboratory	0	0	3	2
7.	MC7512	XML and Web Services Laboratory	0	0	3	2
8.	MC7513	Mini Project(Socially Relevant)	0	0	3	2
		TOTAL	**15**	**0**	**9**	**21**

SEMESTER VI

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
1.	MC7611	Project Work	0	0	24	12
		TOTAL	**0**	**0**	**24**	**12**

TOTAL NO OF CREDITS:119

LIST OF ELECTIVES

SL.NO.	COURSE CODE	L	T	P	C
	ELECTIVE I				
MC7001	Game Programming	3	0	0	3
MC7002	Soft Computing	3	0	0	3
MC7003	Accounting and Financial Management	3	0	0	3
MC7004	Energy Aware Computing	3	0	0	3
MC7005	Security in computing	3	0	0	3
MA7071	Numerical and Statistical Methods	3	0	0	3
	ELECTIVE II				
MC7006	M-commerce	3	0	0	3
MC7007	Health Care Management	3	0	0	3
MC7008	Geological Information Systems	3	0	0	3
MC7009	Human Resource Management	3	0	0	3
MC7010	Enterprise Application Integration	3	0	0	3
MC7011	Big Data Analytics	3	0	0	3
	ELECTIVE III				
MC7012	Ad hoc and Sensor networks	3	0	0	3
MC7013	Semantic Web	3	0	0	3
MC7014	Software Testing and Quality Assurance	3	0	0	3
MC7015	Software Project Management	3	0	0	3
MC7016	Cloud Computing	3	0	0	3
MC7017	Network Protocols	3	0	0	3