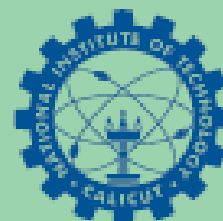CURRICULA

B. Arch & B.Tech.

DEGREE PROGRAMS

(effective from 2010 – 2011)
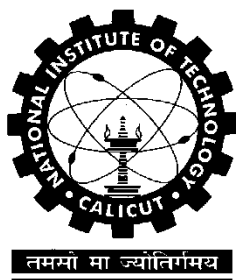
National Institute of Technology Calicut

CURRICULA

B. Arch & B.Tech. DEGREE PROGRAMS

(effective from 2010 – 2011)

तममो मा ज्योतिर्गमय

National Institute of Technology Calicut

NITC PO, Calicut – 673601

Kerala, India

INSTITUTE SLOTS

THEORY COURSES

Day	8.00 - 9.00	9.00- 10.00	10.15 – 11.15	11.15- 12.15	1.00- 2.00	2.00- 3.00	3.00- 4.00	4.00- 5.00	5.00- 6.00
	1	2	3	4	5	6	7	8	9
MON	A	F	D	B	G	E+	-	-	H
TUE	B	G	E	C	A+	F+	-	-	H
WED	C	A	F	D	H	G+	-	-	E@
THU	D	B	G	E	-	C+	-	-	G@
FRI	E	C	A	F	H+	B+	-	-	D+

Note: E@ and G@ are substitute slots for E and G in case U or UA is allotted for Practical Courses

PRACTICAL COURSES.

Day	8.00 - 9.00	9.00- 10.00	10.15– 11.15	11.15- 12.15	1.00- 2.00	2.00- 3.00	3.00- 4.00	4.00- 5.00	5.00- 6.00
	1	2	3	4	5	6	7	8	9
MON	-	-	-	-	-	P			-
						PA		PB	
TUE	-	-	-	-	-	Q			-
						QA		QB	
WED	-	-	-	-	-	R			-
						RA		RB	
THU	-	-	U			S			-
			UA		-	SA		SB	
FRI	-	-	-	-	-	T			-
						TA		TB	

CURRICULUM OF B.Arch. DEGREE PROGRAM

Semester 1

Sl No	Code	Subject	Hours/ Week				Category
			L	T	P/D	C	
1	MA 1001	Mathematics I	3	1	0	3	BS
2	MS 1001	Professional Communication	3	0	0	0	HL
3	ZZ 1001	Engineering Mechanics	3	0	0	3	TE
4	AR 1001	Architectural Graphics I	1	0	3	3	AR
5	AR 1002	Introduction to Architectural Design I	0	0	4	3	AR
6	AR 1091	Basic Design I	0	0	3	2	AR
7	AR 1092	Workshop I	0	0	3	2	TE
8	OT	Physical Education (1Cr.), Value Education (1Cr.), NSS (1Cr.)				3*	OT
		TOTAL	**10**	**1**	**13**	**19+3**	

*Three courses **of One Credit each** to be credited before completing six semesters of the program.

Semester 2

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P/D	C	
1	AR 1003	Building Materials	3	0	0	3	AR
2	AR 1004	Architectural Graphics II	1	0	3	3	AR
3	AR 1005	History of Architecture I	3	0	0	3	AR
4	AR 1006	Theory of Structures	3	1	0	3	TE
5	AR 1007	Introduction to Architectural Design II	0	0	4	3	AR
6	AR 1093	Basic Design II	0	0	3	2	AR
7	CE 1091	Workshop II	0	0	3	2	TE
		TOTAL	**10**	**1**	**13**	**19**	

Total Credits at Level I: 19+19=38 + 3 OT   Cumulative Credits: 38 + 3 OT

Semester 3

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P/D	C	
1	AR 2001	Building Construction I	1	0	3	3	AR
2	AR 2002	Theory of Design	2	0	0	2	AR
3	AR 2003	History of Architecture II	3	0	0	3	AR
4	AR 2004	Structural Design I	3	1	0	3	TE
5	AR 2005	Building Climatology & Solar Architecture	3	0	0	3	AR
6	AR 2006	Architectural Design & Field Tour III	0	0	6	5	AR
7	AR 2091	CAAD Laboratory	0	0	3	2	AR
		TOTAL	**12**	**1**	**12**	**21**	

Semester 4

Sl. No	Code	Subject	L	T	P/D	C	Category
1		Elective I (Global)*	3	0	0	3	GE
2	AR 2007	Building Construction II	2	0	3	4	AR
3	AR 2008	Water Supply and Sanitation	3	0	0	3	TE
4	AR 2009	Structural Design II	3	1	0	3	TE
5	CE 2011	Land Surveying#	3	0	0	3	TE
6	AR 2010	Architectural Design & Field Tour IV	0	0	6	5	AR
7	CE 2096	Surveying Practical#	0	0	3	2	TE
		TOTAL	**14**	**1**	**12**	**23**	

*: The Global Elective can be MA2003 Statistics   Total Credits at Level II: 21+23=44
#: Concurrent Courses   Cumulative Credits: 38+3 OT +44 =82 + 3 OT

Semester 5

Sl. No	Code	Subject	L	T	P/D	C	Category
1		Elective II (Global)**	3	0	0	3	GE
2	AR 3001	Building Construction III	2	0	3	4	AR
3	AR 3002	Sociology and Human Settlement	2	0	0	2	AR
4	AR 3003	Architectural Acoustics	3	0	0	3	TE
5	AR 3004	Environmental Studies for Architecture	3	0	0	3	OT
6	AR 3005	Architectural Design & Field Tour V	0	0	6	5	AR
7	AR 3091	Interactive Media Design Lab	0	0	3	2	AR
		TOTAL	**13**	**0**	**12**	**19+3**	

**: The recommended Global Elective is CE 4004 Economics and Management

Semester 6

Sl. No	Code	Subject	L	T	P/D	C	Category
1		Elective III	3	0	0	3	DE
2	AR 3006	Estimation, Costing & Valuation	3	0	0	3	AR
3	AR 3007	Architectural Illumination	3	0	0	3	TE
4	AR 3008	Working Drawing	0	0	3	2	AR
5	AR 3009	Interior Design	1	0	3	3	AR
6	AR 3010	Energy, Sustainability & Site Planning	3	0	0	3	AR
7	AR 3011	Architectural Design & Field Tour VI	0	0	6	5	AR
		TOTAL	**13**	**0**	**12**	**22**	

Total Credits at Level III: 19+3 OT +22=41+3 OT   Cumulative Credits: 82+3 OT +41+3 OT=123 + 6 OT

Semester 7

Sl. No	Code	Subject	L	T	P/D	C	Category
1		Elective IV	3	0	0	3	DE
2	AR 4001	Heating Ventilation and Air Conditioning	3	0	0	3	TE
3	AR 4002	Landscape Architecture	1	0	3	3	AR
4	AR 4003	Housing	2	0	0	2	AR
5	AR 4004	Urban & Regional Planning	3	0	0	3	AR
6	AR 4005	Architectural Design & Field Tour VII	0	0	9	6	AR
7	AR 4091	Building Science Lab	0	0	3	2	TE
		TOTAL	**12**	**0**	**15**	**22**	

Semester 8

Sl. No	Code	Subject	L	T	P/D	C	Category
1		Elective V	3	0	0	3	DE
2		Elective VI	3	0	0	3	DE
3		Elective VII	3	0	0	3	DE
4	AR 4006	Computer Applications in Architecture	3	0	0	3	AR
5	AR 4007	Architectural Specification	2	0	0	2	AR
6	AR 4008	Architectural Design & Field Tour VIII	0	0	9	6	AR
7	AR 4009	Seminar	0	0	0	2	AR
		TOTAL	**14**	**0**	**9**	**22**	

Total Credits at Level IV: 22+22=44   Cumulative Credits: 123+6 OT +44=167 + 6 OT

Semester 9

Sl. No	Code	Subject	L	T	P/D	C	Category
1	AR 5001	Office Training				5	AR
2	AR 5002	Critical Appraisal of Buildings				2	AR
3	AR 5003	Construction Site Study				1	AR
4	AR 5004	Documentation of Innovative Details				1	AR
5	AR 5005	Thesis I				3	AR
		TOTAL				**12**	

Semester 10

Sl. No	Code	Subject	L	T	P/D	C	Category
1	AR 5006	Construction Management	3	0	0	3	TE
2	AR 5007	Professional Practice	2	0	0	2	AR
3	AR 5008	Thesis II	0	0	15	10	AR
		TOTAL	**5**	**0**	**15**	**15**	

Total Credits at Level V: 12+15=27   Cumulative Credits: 167+6 OT +27=194 + 6 OT

LIST OF ELECTIVES

Sl. No	Code	Subject	L	T	P/D	C	Category
			Hours/Week				
		ELECTIVE III					
1	AR 2051	Ergonomics	3	0	0	3	DE
2	AR 2052	Art in Architecture	3	0	0	3	DE
3	AR 2053	Advanced Theory of Architecture	3	0	0	3	DE
4	AR 2054	Vernacular Architecture	3	0	0	3	DE
		ELECTIVE IV					
5	AR 3051	Architectural Photography	2	0	2	3	DE
6	AR 3052	Traditional Kerala Architecture	3	0	0	3	DE
7	AR 3053	Behavioral Studies in Built Environment	3	0	0	3	DE
8	AR 3054	Soil Mechanics and Foundation Design	3	0	0	3	DE
9	AR 3055	Research Methods	3	0	0	3	DE
		ELECTIVE V					
10	AR 4051	Disaster Management and Earthquake Resistant Buildings	3	0	0	3	DE
11	AR 4052	Architecture as a Cultural System	3	0	0	3	DE
		ELECTIVE VI					
12	AR 4061	Industrial Architecture	3	0	0	3	DE
13	AR 4062	Urban Design	3	0	0	3	DE
14	AR 4063	Traditional Indian Architecture	3	0	0	3	DE
15	AR 4064	Intelligent Buildings	3	0	0	3	DE
		ELECTIVE VII					
16	AR 4071	Architectural Conservation	3	0	0	3	DE
17	AR 4072	Environmental Impact Assessment	3	0	0	3	DE
18	AR 4073	Urban Land Management	3	0	0	3	DE
19	AR 4074	Remote Sensing and GIS	3	0	0	3	DE

Category-wise Credits

Code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	TOTAL
BS	3	0	0	0	0	0	0	0	0	0	3
HL	3	0	0	0	0	0	0	0	0	0	3
TE	5	5	3	11	3	3	5	0	0	3	38
AR	8	14	18	9	13	16	14	13	12	12	129
DE	0	0	0	0	0	3	3	9	0	0	15
GE	0	0	0	3	3	0	0	0	0	0	6
OT	3*	0	0	0	3	0	0	0	0	0	6
Total	19+3*	19	21	23	19+3	22	22	22	12	15	194+6

CURRICULA OF B.TECH. DEGREE PROGRAMS

B.Tech - BIOTECHNOLOGY

Semester 1

S.No	Code	Course	L	T	P	C	Category
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics/Chemistry	3	0	0	3	BS
3	MS1001/ZZ1003	Professional Communication / Basic Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics / Engineering Graphics	3 1	0 0	0 3	3	ES/TA
5	ZZ1004/BT1001	Computer Programming / Introduction to Life Sciences	2	0	0	2	ES/PT
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/ CY1094	Physics lab. / Chemistry lab.	0	0	2	1	BS
8	ZZ1094/ZZ1093/ ZZ1095	OT (Value Education (1), Physical Education (1), NSS(1))	-	-	-	3*	OT
		Total	**14/12**	**1**	**3/6**	**17+3***	

*Three courses of one credit each is to be credited within the first four semesters

Semester 2

S.No	Code	Course	L	T	P	C	Category
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/ PH1001	Chemistry/ Physics	3	0	0	3	BS
3	ZZ1003/ MS1001	Basic Electrical Sciences/ Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA /ES
5	BT1001/ ZZ1004	Introduction to Life Sciences/ Computer Programming	2	0	0	2	PT /ES
6	ZZ1092/ZZ1091	Workshop II / Workshop I	0	0	3	2	TA
7	CY1094/ PH1091	Chemistry lab./Physics lab.	0	0	2	1	BS
		Total	**12/14**	**1**	**3/6**	**17**	

Semester 3

Sl.No	Code	Course	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	MA2001	Mathematics-III	3	1	0	3	BS
2	BT2001	Cell Biology	3	0	0	3	PT
3	BT2002	Microbiology	3	0	0	3	PT
4	BT2003	Biochemistry	3	0	0	3	PT
5	BT2004	Biochemical Thermodynamics	3	0	0	3	PT
6	BT2005	Process Calculations	3	0	0	3	PT
7	BT2091	Microbiology Laboratory	0	0	3	2	PT
8	BT2092	Biochemistry Laboratory	0	0	3	2	PT
Total			**18**	**1**	**6**	**22**	

Semester 4

Sl.No	Code	Course	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	MA2002	Mathematics-IV	3	1	0	3	BS
2	BT2006	Bioprocess Principles	3	0	0	3	PT
3	BT2007	Molecular Biology	3	0	0	3	PT
4	BT2008	Biostatistics	3	0	0	3	PT
5	BT2009	Unit Operations	3	0	0	3	PT
6	BT2010	Bioenergetics & Metabolism	3	0	0	3	PT
7	BT2093	Bioprocess Laboratory	0	0	3	2	PT
8	BT2094	Molecular Biology Laboratory	0	0	3	2	PT
Total			**18**	**1**	**6**	**22**	

Semester 5

Sl.No	Code	Course	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	BT3001	Immunotechnology	3	0	0	3	PT
2	BT3002	Bioreactor Design and Analysis	3	0	0	3	PT
3	BT3003	Downstream Processing	3	0	0	3	PT
4	BT3004	Instrumental Methods of Analysis	3	0	0	3	PT
5	BT3005	Environmental Studies	3	0	0	3	OT
6		Elective-I	3	0	0	3	PT
7	BT3091	Immunology Laboratory	0	0	3	2	PT
8	BT3092	Downstream Process Laboratory	0	0	3	2	PT
Total			**18**	**0**	**6**	**22**	

Semester 6

Sl.No	Code	Course	Hours/Week				Category
			L	T	P	C	
1	BT3006	Plant Biotechnology	3	0	0	3	PT
2	BT3007	Bioinformatics	3	0	0	3	PT
3	BT3008	Genetic Engineering	3	0	0	3	PT
4	BT3009	Enzyme kinetics & technology	3	0	0	3	PT
5		Elective-II	3	0	0	3	PT
6	BT3093	Plant Biotechnology & Enzyme Kinetics Laboratory	0	0	3	2	PT
7	BT3094	Bioinformatics Laboratory	0	0	3	2	PT
8	BT3095/ BT3096	Mini Project/Industrial Training	0	0	3	1[@]	PT
		Total	15	0	9	20	

Semester 7

Sl.No	Code	Course	Hours/Week				Category
			L	T	P	C	
1	MS----	Principles of Management	3	0	0	3	HL
2	BT4001	Ethics & Regulatory Issues in Biotech	2	0	0	2	PT
3	BT4002	Structural Biology	3	0	0	3	PT
4		Elective-III	3	0	0	3	PT
5		Elective-IV	3	0	0	3	PT
6		Elective-V	3	0	0	3	GE
7	BT4097	Project	0	0	6	3	PT
		Total	17	0	6	20	

Semester 8

Sl.No	Code	Course	Hours/Week				Category
			L	T	P	C	
1	MS4003	Economics	3	0	0	3	HL
2		Elective-VI	3	0	0	3	PT
3		Elective-VII	3	0	0	3	PT
4		Elective-VIII	3	0	0	3	GE
5	BT4098	Seminar	0	0	2	1	PT
6	BT4099	Project	0	0	10	4	PT
		Total	12	0	12	17	

[@]Mini Project is compulsory. Students are free to credit both mini project & industrial training.

List of Electives

S.No	Code	Course	Credits	Semester
1	BT3021	Cytogenetics	3	5
2	BT3022	Biopharmaceutical Technology	3	5
3	BT3023	Food Biotechnology	3	5
4	BT3024	Bioreaction engineering	3	6
5	BT3025	Environmental Biotechnology	3	6
6	BT3026	Herbal Biotechnology	3	6
7	BT4021	Marine Biotechnology	3	7
8	BT4022	Good Manufacturing Practice	3	7
9	BT4023	Protein Engineering	3	7
10	BT4024	Molecular Modelling & Drug Design	3	7
11	BT4025	Metabolic Engineering	3	7
12	BT4026	Animal Biotechnology	3	8
13	BT4027	Cancer Biology	3	8
14	BT4028	Nanobiotechnology	3	8
15	BT4029	Mineral Biotechnology	3	8
16	BT4030	Human Physiology	3	8
17	BT4031	Stem Cell Biotechnology	3	8

B.Tech - CHEMICAL ENGINEERING

Semester 1 &2

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/ CY1001	Physics/ Chemistry	3	0	0	3	BS
3	MS1001/ ZZ1003	Professional Communication/Electrical Science	3	0	0	3	HL/ES
4	ZZ1001/ ZZ1002	Engineering Mechanics /Engineering graphics	3 1	0	0 3	3	ES/TA
5	ZZ1004/ CH1001	Computer Programming/ Introduction to Chemical Engineering	2	0	0	2	PT
6	ZZ1091/ ZZ1092	Workshop I/Workshop II	0	0	3	2	TA
7	PH1091/ CY1094	Physics Lab/Chemistry Lab	0	0	2	1	BS
8	ZZ1094/ ZZ1093/ ZZ1095	OT Courses (Value Edn, Phy.Edn, NSS)	0	0	0	3*	OT
		Total	**14/12**	**1**	**3/6**	**17+3 ***	
9	MA1002	Mathematics II	3	1	0	3	BS
10	CY1001/ PH 1001	Chemistry/Physics	3	0	0	3	BS
11	ZZ1003/MH1001	Electrical Sciences/Professional Communication	3	0	0	3	ES/HL
12	ZZ1002/ ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA/ES
13	ZZ1004/ CH1001	Introduction to Chemical Engineering /Computer Programming	2	0	0	2	PT
14	ZZ1092/ ZZ1091	Work shop II/ Work shop I	0	0	3	2	TA
15	CY1094/ PH 1091	Chemistry Lab/Physics Lab	0	0	2	1	BS
		Total	**12/14**	**1**	**3/6**	**17**	

Semester 3

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA 2001	Mathematics III	3	0	0	3	BS
2	CY 2001	Physical Chemistry	3	0	0	3	PT
3	CH 2001	Chemical Technology	3	0	0	3	PT
4	CH 2002	Process Calculations	3	0	0	3	PT
5	CH 2003	Fluid Mechanics	3	0	0	3	PT
6	ME 2091	Machine Drawing	0	0	3	2	PT
7	CH 2091	Chemical Technology Laboratory	0	0	3	2	PT
		Total	**15**	**0**	**6**	**19**	

Semester 4

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA 2002	Mathematics IV	3	1	0	3	BS
2	CH 2004	Material Science	3	0	0	3	PT
3	CH 2005	Mechanical Operations	3	0	0	3	PT
4	CH 2006	Heat Transfer	3	0	0	3	PT
5	CH 2007	Chemical Engineering Thermodynamics I	3	0	0	3	PT
6	CY 2002	Organic Chemistry	3	0	0	3	PT
7	CH 2092	Fluid Mechanics Lab	0	0	3	2	PT
8	CH 2093	Mechanical Operations Lab	0	0	3	2	PT
		Total	18	1	6	22	

Semester 5

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	CH3001	Chemical Engineering Thermodynamics II	3	0	0	3	
2	CH 3002	Mass Transfer-I	3	0	0	3	PT
3	CH 3003	Chemical Reaction Engineering	3	0	0	3	PT
4	CH 3004	Process Instrumentation	3	0	0	3	PT
5	CH 3005	Environmental studies	3	0	0	3	OT
6		Elective I	3	0	0	3	PT
7	CH 3091	Environmental and Pollution Control Lab	0	0	3	2	PT
8	CH 3092	Heat Transfer Laboratory	0	0	3	2	PT
		Total	18	0	6	22	

Semester 6

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	CH3006	Mass Transfer II	3	0	0	3	PT
2	CH 3007	Process Dynamics & Control	3	0	0	3	PT
3	CH 3008	Chemical Process Equipment Design	2	0	2	3	PT
4		Elective II	3	0	0	3	PT
5		Elective III	3	0	0	3	PT
6	CH 3093	Chemical Reaction Engineering Lab	0	0	3	2	PT
7	CH 3094	Mass Transfer Laboratory	0	0	3	2	PT
		Total	14	0	8	19	

Semester 7

Sl.No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	CH 4001	Transport Phenomena	3	0	0	3	PT
2	CH 4002	Computer Aided Design	2	0	2	3	PT
3		Principle of Management	3	0	0	3	PT
4		Elective IV	3	0	0	3	PT
5		Elective V	3	0	0	3	PT
6	CH 4091	Process Dynamics & Control Lab	3	0	0	2	PT
7	CH 4092	Project	0	0	6	3	PT
		Total	17	0	8	20	

Semester 8

Sl.No	Code	Course Title	L	T	P	C	Category
1	MS 4003	Process Economics	3	0	0	3	PT
2	CH 4003	Chemical Process Optimization	3	0	0	3	PT
3		Elective VI	3	0	0	3	PT
4		Elective VII	3	0	0	3	PT
5		Elective VIII	3	0	0	3	PT
6	CH 4093	Seminar	0	0	3	1	PT
7	CH 4094	Project	0	0	6	5	PT
		Total	**15**	**0**	**9**	**21**	

List of Electives

Code	Course Title	L	T	P	C	Category
CH 4021	Energy Technology	3	0	0	3	PT
CH 4022	Petroleum Refining Operations and Processes	3	0	0	3	PT
CH 4023	Corrosion Engineering	3	0	0	3	PT
CH 4024	Biochemical Engineering	3	0	0	3	PT
CH 4025	Polymer Technology	3	0	0	3	PT
CH 4026	Food Technology	3	0	0	3	PT
CH 4027	Electrochemical Engineering	3	0	0	3	PT
CH 4028	Ceramic Technology	3	0	0	3	PT
CH 4029	Biotechnology	3	0	0	3	PT
CH 4030	Environment Impact Assessment and Clean Technology	3	0	0	3	PT
CH 4031	Process Automation	3	0	0	3	PT
CH 4032	New Enterprises Creation and Management	3	0	0	3	PT
CH 4033	Speciality Polymers	3	0	0	3	PT
CH 4034	Process Modelling and Simulation	3	0	0	3	PT
CH 4035	Fertilizer Technology	3	0	0	3	PT
CH 4036	Membrane Technology	3	0	0	3	PT
CH 4037	Mathematical Methods in Chemical Engineering	3	0	0	3	PT
CH 4038	Computational fluid dynamics	3	0	0	3	PT
CH 4039	Catalysis	3	0	0	3	PT
CH 4040	Professional Ethics & Human Values	3	0	0	3	PT
CH 4041	Micro Electronics Processing	3	0	0	3	PT
CH 4042	Risk Analysis and Hazop	3	0	0	3	PT
CH 4043	Operations Research	3	0	0	3	PT
CH 4044	Novel Separation Techniques	3	0	0	3	PT
CH 4045	Human Resource Management	3	0	0	3	PT
CH 4046	Project Engineering	3	0	0	3	PT
CH 4047	Drugs & Pharmaceutical Technology	3	0	0	3	PT
CH 4048	Fuel Cells	3	0	0	3	PT
CH 4049	Composite Materials	3	0	0	3	PT
CH 4050	Safety in Chemical Industries	3	0	0	3	PT
CH 4051	Computer Application in Chemical Engineering	3	0	0	3	PT

B.Tech - CIVIL ENGINEERING

Semester 1

Sl. No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	0	0	3	BS
3	MS1001/ZZ1003	Professional Communication / Basic Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics/ Engineering Graphics	3/1	0/0	0/3	3	ES/TA
5	ZZ1004/CE1001	Computer Programming / Introduction to Civil Engineering	2	0	0	2	PT
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/CY1094	Physics Lab. / Chemistry Lab.	0	0	2	1	BS
8	ZZ1094/ZZ1093/ ZZ1095	OT (Value Education -1, Physical Education – 1, NSS - 1	-	-	-	3[*]	OT
		Total	14/12	1	3/6	17+3[*]	

[*] Three courses of one credit each are to be credited within the first four semesters

Semester 2

Sl. No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/PH1001	Chemistry / Physics	3	0	0	3	BS
3	ZZ1003/MS1001	Basic Electrical Sciences / Professional Communication	3	0	0	3	ES / HL
4	ZZ1002 / ZZ1001	Engineering Graphics / Engineering Mechanics	1/3	0/0	3/0	3	TA / ES
5	CE1001 / ZZ1004	Introduction to Civil Engineering / Computer Programming	2	0	0	2	PT
6	CY1094 / PH1091	Chemistry Lab. / Physics Lab.	0	0	2	1	TA
7	ZZ1092 / ZZ1091	Workshop II / Workshop I	0	0	3	2	BS
		Total	12/14	1	3/6	17	

Semester 3

Sl. No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA2001	Mathematics - III	3	1	0	3	BS
2	CE2001	Mechanics of Solids	3	0	0	3	PT
3	CE2002	Mechanics of Fluids	3	0	0	3	PT
4	CE2003	Building Technology	3	0	0	3	PT
5	CE2004	Surveying	3	0	0	3	PT
6	CE2091	Surveying Practical - I	0	0	3	2	PT
7	CE2092	Material Testing Laboratory - I	0	0	3	2	PT
		Total		21		19	

Semester 4

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	MA2002	Mathematics - IV	3	1	0	3	BS
2	CE2005	Structural Analysis - I	3	0	0	3	PT
3	CE2006	Open Channel Hydraulics & Hydrology	3	0	0	3	PT
4	CE2007	Functional Design of Buildings	2	0	2	3	PT
5	CE2008	Geomatics	3	0	0	3	PT
6	CE2009	GeoSciences	3	1	0	3	PT
1	CE2093	Surveying Practical - II	0	0	3	2	PT
2	CE2094	Material Testing Laboratory - II	0	0	3	2	PT
		Total		**25**		**22**	

Semester 5

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	CE3001	Structural Analysis - II	3	0	0	3	PT
2	CE3002	Structural Design - I	3	1	0	3	PT
3	CE3003	Water Resource Engineering-I	3	0	0	3	PT
4	CE3004	Geotechnology	3	0	0	3	PT
5	CE3005	Transportation Engineering - I	3	0	0	3	PT
6	CE3006	Environmental Studies in Civil Engineering	3	1	0	3	OT
1	CE3091	Building Design & Drawing	0	0	3	2	PT
2	CE3092	Geotechnical Engineering Laboratory	0	0	3	2	PT
		Total		24		22	

Semester 6

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	CE3007	Structural Design - II	3	1	0	3	PT
2	CE3008	Transportation Engineering - II	3	0	0	3	PT
3	CE3009	Environmental Engineering	3	1	0	3	PT
4	CE****	Elective I	3	0	0	3	PT
5	CE****	Elective II	3	0	0	3	PT
1	ME3093	Fluids Laboratory	0	0	3	2	PT
2	CE3094	Environmental Engineering Laboratory	0	0	3	2	PT
		Total		21		19	

Semester 7

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	CE4001	Computer Applications in Civil Engineering	3	0	0	3	PT
2	CE4002	Structural Analysis -III	3	0	0	3	PT
3	CE4003	Water Resource Engineering - II	3	0	0	3	PT
4	CE****	Elective III	3	0	0	3	PT
5	****	Elective IV	3	0	0	3	GE
1	CE4091	Computer Applications Laboratory	0	0	3	2	PT
2	CE4092	Seminar	0	0	2	1	PR
3	CE4098	Project	0	0	6	3	PR
		Total		26		21	

Semester 8

Sl. No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	CE4004	Economics & Management	3	0	0	3	HL
2	CE4005	Construction Management & Quantity Surveying	3	1	0	3	HL
3	CE4006	Professional Practice	3	1	0	3	PT
4	CE****	Elective V	3	0	0	3	PT
5	****	Elective VI	3	0	0	3	GE
1	CE4099	Project	0	0	10	5	PR
		Total		25		20	

LIST OF ELECTIVES

Sl. No	Code	Course Title	L/T/P	C
1	CE3021	Statistics, Probability and Reliability Methods in Civil Engineering	3/0/0	3
2	CE3022	Concrete Technology	3/0/0	3
3	CE3023	Ground Improvement	3/0/0	3
4	CE3024	Reinforced Earth and Geotextiles	3/0/0	3
5	CE3025	Water Conveyance Systems	3/0/0	3
6	CE3026	Hydraulic Machines	3/0/0	3
7	CE3027	Pavement Design	3/0/0	3
8	CE3028	Finite Element Analysis of Fluid Flow	3/0/0	3
9	CE3029	Pre Stressed Concrete Design	3/0/0	3
10	CE3030	Earth and Earth Retaining Structures	3/0/0	3
11	CE3031	Environmental Geotechnics	3/0/0	3
12	CE3032	Remote Sensing and GIS Applications	3/0/0	3
13	CE3033	Hydropower	3/0/0	3
14	CE3034	Traffic Engineering	3/0/0	3

15	CE3035	Advanced Surveying	3/0/0	3
16	CE3036	Advanced Concrete Design	3/0/0	3
17	CE3037	Computational Elasticity	3/0/0	3
18	CE4021	Water Resources Systems	3/0/0	3
19	CE4022	Computer Applications in Hydro Engineering	3/0/0	3
20	CE4023	Coastal Engineering	3/0/0	3
21	CE4024	Transportation Planning	3/0/0	3
22	CE4025	Advanced Steel Design	3/0/0	3
23	CE4026	Advanced Geotechnical Engineering	3/0/0	3
24	CE4027	Soil Dynamics and Design of Machine Foundations	3/0/0	3
25	CE4028	Industrial Waste Engineering	3/0/0	3
26	CE4029	Environmental Risk Assessment	3/0/0	3
27	CE4030	Environmental Pollution Control Engineering	3/0/0	3
28	CE4031	Design of Experiments	3/0/0	3
29	CE4032	Transportation Infrastructure Design	3/0/0	3
30	CE4051	Advanced Structural Analysis	3/0/0	3
31	CE4052	Earth and Rockfill Dam Engineering	3/0/0	3
32	CE4053	Probability and Reliability Techniques in Water Resources Engineering	3/0/0	3
33	CE4054	Environmental Hydraulics	3/0/0	3
34	CE4055	Environmental Impact Assessment of Civil Engineering Projects	3/0/0	3
35	CE4056	Environmental Forensics	3/0/0	3
36	CE4057	Advanced Environmental Engineering	3/0/0	3
37	CE4058	Multivariate Data Analysis	3/0/0	3
38	CE4059	Data Structures and Analysis	3/0/0	3
39	CE4060	Pavement Management	3/0/0	3
40	CE4061	Numerical Modelling in Geotechnical Engineering	3/0/0	3
41	CE4062	Optimization of Civil Engineering Systems	3/0/0	3

B.Tech - COMPUTER SCIENCE AND ENGINEERING

Semester 1

Sl. No.	Code	Title	L	T	P	C	Category
			Hours/ Week				
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/ CY1001	Physics/Chemistry	3	0	0	3	BS
3	MS1001/ EE1001	Professional Communication/Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ ZZ1002	Engineering Mechanics/Engineering Graphics	3/1	1/0	0/3	3	ES/TA
5	CS1001/ ZZ1004	Foundations of Computing /Computer Programming	2	0	0	2	PT/ES
6	ZZ1091/ ZZ1092	Workshop I/Workshop II	0	0	3	2	TA
7	PH1091/ PY1094	Physics/Chemistry Laboratory	0	0	2	1	BS
8	ZZ1094/ ZZ1093/ ZZ1095	Ph. Edn (1 Cr), Value Edn (1 Cr), NSS (1 Cr)	0	0	3*	3	OT
		Total Credits				20	

* Three OT courses of one credit to be credited within the first four semesters.

Semester 2

Sl. No.	Code	Title	L	T	P	C	Category
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/ PH1001	Chemistry/Physics	3	0	0	3	BS
3	EE1001/ MS1001	Electrical Sciences/Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ ZZ1001	Engineering Graphics/Engineering Mechanics	1/3	0/1	3/0	3	TA/ES
5	ZZ1004/ CS1001	Computer Programming/Foundations of Computing	2	0	0	2	ES/PT
6	PY1094/ PH1091	Chemistry/Physics Laboratory	0	0	2	1	BS
7	ZZ1092/ ZZ1091	Workshop II/Workshop I	0	0	3	2	TA
		Total Credits				17	

Semester 3

Sl. No.	Code	Title	L	T	P	C	Category
1	MA2001	Mathematics III	3	1	0	3	BS
2	CS2001	Logic Design	3	0	2	4	PT
3	CS2002	Foundations of Programming	4	0	0	4	PT
4	EC2014	Signals and Systems	3	0	0	3	PT
5	CS2091	Logic Design Laboratory	1	0	3	3	PT
6	CS2092	Programming Laboratory	1	0	3	3	PT
		Total Credits				20	

Semester 4

Sl. No.	Code	Title	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	MA2002	Mathematics IV	3	1	0	3	BS
2	CS2004	Computer Organization	3	0	2	4	PT
3	CS2005	Data Structures and Algorithms	4	0	0	4	PT
4	CS2006	Discrete Structures	4	0	0	4	PT
5	CS2093	Hardware Laboratory	1	0	3	3	PT
6	CS2094	Data Structures Laboratory	1	0	3	3	PT
Total Credits						21	

Semester 5

S. No.	Code	Title	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	CS3001	Theory of Computation	4	0	0	4	PT
2	CS3002	Database Management Systems	3	0	2	4	PT
3	CS3003	Operating Systems	3	0	2	4	PT
4		Elective I				4	PT
5		Elective II				3/4	PT
6		Laboratory Elective	1	0	3	3	PT
Total Credits						22-23	

Semester 6

S. No.	Code	Title	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	CS3004	Software Engineering	3	0	2	4	PT
2	CS3005	Compiler Design	3	0	2	4	PT
3	CS3006	Computer Networks	3	0	2	4	PT
4		Elective III				4	PT
5		Elective IV				3/4	PT
6		Laboratory Elective	1	0	3	3	PT
Total Credits						22-23	

Semester 7

S. No.	Code	Title	L	T	P	C	Category
			L	**T**	**P**	**C**	
1	CS4001	Environmental Studies	3	0	0	3	OT
2	MS4003	Economics	3	0	0	3	HL
3	ME4104	Principles of Management	3	0	0	3	HL
4		Elective V				3/4	PT
5		Elective VI (Global)				3	GE
6	CS4098	Seminar	0	0	2	1	PR
7	CS4089	Project	0	0	6	3	PR
Total Credits						19-20	

Semester 8

S. No.	Code	Title	Hours/ Week				Category
			L	T	P	C	
1		Elective VII				4	PT
2		Elective VIII				4	PT
3		Elective IX				3/4	PT
4		Elective X (Global)				3	GE
5	CS4099	Project	0	0	10	5	PR
Total Credits						19-20	

Category-wise Credits

Code	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL
BS	7	7	3	3	0	0	0	0	20
ES	3	5	0	0	0	0	0	0	8
HL	3	0	0	0	0	0	6	0	9
TA	2	5	0	0	0	0	0	0	7
PT	2	0	17	18	22	22	3	11	95
PR	0	0	0	0	0	0	4	5	9
GE	0	0	0	0	0	0	3	3	6
OT	3	0	0	0	0	0	3	0	6
TOTAL	20	17	20	21	22	22	19	19	160

LIST OF ELECTIVES

S. No.	Code	Title	L	T	P	C	Category
1	CS4021	Number Theory and Cryptography	3	0	2	4	PT
2	CS4022	Principles of Programming Languages	3	0	2	4	PT
3	CS4023	Computational Intelligence	3	0	2	4	PT
4	CS4024	Information Theory	4	0	0	4	PT
5	CS4025	Graph Theory and Combinatorics	4	0	0	4	PT
6	CS4026	Combinatorial Algorithms	3	0	2	4	PT
7	CS4027	Topics in Algorithms	4	0	0	4	PT
8	CS4028	Quantum Computation	4	0	0	4	PT
9	CS4029	Topics in Theory of Computation	4	0	0	4	PT
10	CS4030	Computational Complexity	4	0	0	4	PT
11	CS4031	Computational Algebra	3	0	2	4	PT
12	CS4032	Computer Architecture	3	0	2	4	PT
13	CS4033	Distributed Computing	3	0	2	4	PT
14	CS4034	Middleware Technologies	3	0	2	4	PT
15	CS4035	Computer Security	3	0	2	4	PT
16	CS4036	Advanced Database Management Systems	3	0	2	4	PT
17	CS4037	Cloud Computing	3	0	2	4	PT
18	CS4038	Data Mining	3	0	2	4	PT
19	CS4039	Multi Agent Systems	3	0	2	4	PT
20	CS4040	Bioinformatics	3	0	2	4	PT
21	CS4041	Natural Language Processing	3	0	2	4	PT
22	CS4042	Web Programming	3	0	2	4	PT
23	CS4043	Image Processing	3	0	2	4	PT
24	CS4044	Pattern Recognition	3	0	2	4	PT
25	CS4045	Medical Image Processing	3	0	2	4	PT
26	CS4046	Computer Vision	3	0	2	4	PT
27	CS4047	Computer Graphics	3	0	2	4	PT
28	CS4048	Topics in Compilers	3	0	2	4	PT
29	CS4049	Advanced Computer Networks	3	0	2	4	PT
30	CS4050	Design and Analysis of Algorithms	3	0	2	4	PT
31	CS4051	Coding Theory	3	0	2	4	PT
32	CS4052	Logic for Computer Science	3	0	2	4	PT

B.Tech - ELECTRONICS AND COMMUNICATION ENGINEERING

Semester 1

Sl No	Code	Subject	L	T	P/D	C	Category
					Hours/ Week		
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	0	0	3	BS
3	MS1001/ZZ1003	Professional Communication / Basic Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics / Engineering Graphics	3 1	0 0	0 3	3	ES/TA
5	ZZ1004 /EC1001	Computer Programming / Introduction to Electronics Engineering	2	0	0	2	ES/PT
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/CY1094	Physics Lab./ Chemistry Lab.	0	0	2	1	BS
8	ZZ1094/ZZ1093/ ZZ1095	OT (Value Education(1),Physical Education(1), NSS(1)	-	-	-	3*	OT
						Total Credits: 17+3*	

*Three courses of one credit each is to be credited within the first four semesters.

Semester 2

Sl No	Code	Subject	L	T	P/D	C	Category
					Hours/ Week		
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/PH1001	Chemistry / Physics	3	0	0	3	BS
3	ZZ1003/MS1001	Basic Electrical Sciences/ Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA/ES
5	EC1001/ ZZ1004	Introduction to Electronics Engineering/ Computer Programming	2	0	0	2	PT/ES
6	CY1094/PH1091	Chemistry Lab./ Physics Lab	0	0	2	1	BS
7	ZZ1092/ZZ1091	Workshop II / Workshop I	0	0	3	2	OT
						Total Credits: 17	

*Three courses of one credit each is to be credited within the first four semesters.

Semester 3

Sl No	Code	Subject	L	T	P/D	C	Category
					Hours/ Week		
1	MA 2001	Mathematics III	3	1	0	3	BS
2	EC 2011	Network Theory	3	0	0	3	PT
3	EC 2012	Logic Design	4	0	0	4	PT
4	EC 2013	Solid State Devices	4	0	0	4	PT
5	EC 2014	Signals and Systems	3	0	0	3	PT
6	EC 2091	Basic Electronics Lab	0	0	3	2	PT
7	EC 2092	Electronics Workshop	0	0	3	2	PT
						Total Credits: 21	

National Institute of Technology Calicut

Semester 4

Sl No	Code	Subject	L	T	P/D	C	Category
1	MA 2002	Mathematics IV	3	1	0	3	BS
2	EC 2021	Electronic Circuits - I	4	0	0	4	PT
3	EC 2022	Electromagnetic Field Theory	4	0	0	4	PT
4	EC 2023	Microprocessors and Microcontrollers	3	0	0	3	PT
5	EC 2024	Fundamentals of Communication	4	0	0	4	PT
6	EC 2093	Electronic Circuits Lab - I	0	0	3	2	PT
7	EC 2094	Logic Design Lab	0	0	3	2	PT
						Total Credits: 22	

Semester 5

Sl No	Code	Subject	L	T	P/D	C	Category
1	EC 3011	Electronic Circuits - II	4	0	0	4	PT
2	EC 3012	Digital Communication	4	0	0	4	PT
3	EC 3013	Digital Signal Processing	3	0	0	3	PT
4	EC 3014	Control systems	3	0	0	3	PT
5		Elective 1	3	0	0	3	PT
6	EC 3091	Electronic Circuits Lab - II	0	0	3	2	PT
7	EC 3092	Microprocessors and Microcontrollers Lab	0	0	3	2	PT
						Total Credits: 21	

Semester 6

Sl No	Code	Subject	L	T	P/D	C	Category
1	ME 4104	Principles of Management	3	0	0	3	HL
2	EC 3021	Computer Organization & Architecture	3	0	0	3	PT
3	EC 3022	Information Theory & Coding	4	0	0	4	PT
4	EC 3023	Computer Networks	3	0	0	3	PT
5		Elective 2	3	0	0	3	PT
6	EC 3024	Environmental Studies for Electronics Engineers	3	0	0	3*	OT
7	EC 3093	Analog Communication Lab	0	0	3	2	PT
8	EC 3099	Mini Project	0	0	3	1	PT
						Total Credits: 19 +3*	

Semester 7

Sl No	Code	Subject	L	T	P/D	C	Category
1	MS 4003	Economics	3	0	0	3	HL
2	EC 4011	Fundamentals of Wireless Communication	4	0	0	4	PT
3		Elective 3	3	0	0	3	PT
4		Elective 4	3	0	0	3	PT
5	EC 4091	Digital Signal Processing Lab	0	0	3	2	PT
6	EC 4092	Digital Communication Lab	0	0	3	2	PT
7	EC 4098	Major Project	0	0	6	3	PT
						Total Credits: 20	

Semester 8

Sl No	Code	Subject	L	T	P/D	C	Category
			Hours/ Week				
1		Elective 5	3	0	0	3	PT
2		Elective 6	3	0	0	3	PT
3		Elective 7	3	0	0	3	PT
4		Elective 8	3	0	0	3	PT
5	EC 4094	Seminar	0	0	3	1	PT
6	EC 4099	Major Project	0	0	6	4	PT
						Total Credits: 17	

Total Credits = 154 + 6 (OT) = 160

LIST OF ELECTIVES

SL.No.	Code	Course Title	Credit
1	EC 3031	Television Engineering	3
2	EC 3032	Power Electronics	3
3	EC 3033	Microelectronics Technology	3
4	EC 3034	Modeling and Testing of Digital Systems	3
5	EC 3035	MOS Device Modeling	3
6	EC 3036	VLSI Circuits and Systems	3
7	EC 3037	Active Network Synthesis	3
8	EC 3038	Embedded Systems	3
9	EC 3039	Multi Rate Systems	3
10	EC 3040	Digital Image Processing	3
11	EC 4031	Microwave Communication	3
12	EC 4032	Speech Processing	3
13	EC 4033	Wavelet Theory	3
14	EC 4034	RF Circuits	3
15	EC 4035	High Speed Digital Circuits	3
16	EC 4036	Antenna Theory	3
17	EC 4037	Analog MOS Integrated Circuits	3
18	EC 4038	High Speed Semiconductor Devices	3
19	EC 4039	Nanoelectronics	3
20	EC 4040	Opto-electronic Communication Systems	3
21	EC 4041	Communication Switching Systems	3
22	EC 4042	Radar Engineering	3
23	EC 4043	Cryptography: Theory and Practice	3
24	EC 4044	Opto-electronic Devices and Systems	3
25	EC 4045	Signal Compression	3
26	EC 4046	Microwave Devices and Circuits	3
27	EC 4047	Advanced Wireless Communication	3
28	EC 4048	Signal Estimation and Detection	3
29	EC 4049	Architecture of Advanced Processors	3
30	EC 4050	Radiation and Propagation	3
31	EC 4051	Electronic Instrumentation	3
32	EC 4052	State of the art and Future Memories	3
33	EC 4053	Reliability of Semiconductor Devices	3
34	EC 4054	Silicon on Insulator and Advanced MOSFET based structures	3

National Institute of Technology Calicut

CATEGORY-WISE CREDITS

Category	Credits
BS	20
HL	9
ES	8
TA	7
PT	110
OT	6
Total	**160**

B.Tech - ELECTRICAL AND ELECTRONICS ENGINEERING.

Semester 1

Sl No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA1001	Mathematics – I	3	1	-	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	-	-	3	BS
3	MS1001/ZZ1003	Professional Communication / Basic Electrical Sciences	3	-	-	3	HL/ES
4	ZZ1001/ZZ1002	Engg. Mechanics / Engg. Graphics	3 1	- -	0 3	3	ES/TA
5	ZZ1004/EE1001	Computer Programming/Introduction to Electrical Engineering	2	-	-	2	ES/PT
6	ZZ1091/ZZ1092	Workshop I / Workshop II	-	-	3	2	TA
7	PH1091/CY1094	Physics Lab / Chemistry Lab	-	-	2	1	BS
8	ZZ1094/ZZ1093/ ZZ 1095	OT Courses (Value Edn, Phy. Edn, NSS)	-	-	-	3*	OT
		Total Credits	**14/12**	**1**	**5/8**	**17+3***	

* Three courses of 1 credit each to be credited within the first four semesters

Semester 2

Sl No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA1002	Mathematics – II	3	1	-	3	BS
2	CY1001/ PH1001	Chemistry / Physics	3	-	-	3	BS
3	ZZ1003/M S1001	Basic Electrical Sciences / Professional Communication	3	-	-	3	ES/HL
4	ZZ1002/Z Z1001	Engg. Graphics / Engg. Mechanics	1 3	- -	3 -	3	TA/ES
5	EE1001/Z Z1004	Introduction to Electrical Engineering / Computer Programming	2	-	-	2	PT/ES
6	ZZ1092/Z Z1091	Workshop II / Workshop I	-	-	3	2	TA
7	CY1094/P H1091	Chemistry Lab / Physics Lab	-	-	2	1	BS
		Total Credits	**12/14**	**1**	**8/5**	**17**	

Semester 3

Sl No	Code	Course Title	Hours/Week				Category
			L	T	P	C	
1	MA2001	Mathematics – III	3	1	-	3	BS
2	EE2001	Signals & Systems	3	-	-	3	PT
3	EE2002	Logic Design	3	-	-	3	PT
4	EE2003	Electrical Measurements	3	-	-	3	PT
5	EE2004	Basic Electronic Circuits	3	-	-	3	PT
6	EE2090	Basic Electrical Engineering Lab	-	-	3	2	PT
7	EE2091	Electronics Lab - I	-	-	3	2	PT
		Total Credits	**15**	**1**	**6**	**19**	

Semester 4

Sl No	Code	Course Title	L	T	P	C	Category
			Hours/Week				
1	MA2002	Maths – IV	3	1	-	3	BS
2	EE2005	Circuits & Networks	3	-	-	3	PT
3	EE2006	Applied Electromagnetics	3	-	-	3	PT
4	EE2007	Electrical Machines – I	3	-	-	3	PT
5	EE2008	Analog Electronic Circuits & Systems	3	-	-	3	PT
6	ME2007	Mechanical Engineering	3	-	-	3	PT
7	EE2092	Electrical Measurements Lab	-	-	3	2	PT
8	EE2093	Electronics Lab II	-	-	3	2	PT
		Total Credits		**1**	**6**	**22**	

Semester 5

Sl No	Code	Course Title	L	T	P	C	Category
			Hours/Week				
1	EE3001	Microprocessors & Microcontrollers	3	-	-	3	PT
2	EE3002	Control Systems -1	3	-	-	3	PT
3	EE3003	Electrical Machines - II	3	-	-	3	PT
4	EE3004	Power Systems - I	3	-	-	3	PT
5		Elective - I	3	-	-	3	PT
6		Elective - 2	3	-	-	3	PT
7	ME3094	Mechanical Engineering Lab	-	-	3	2	PT
8	EE3091	Electrical Machines Lab - I	-	-	3	2	PT
		Total Credits	**18**	**-**	**6**	**22**	

Semester 6

Sl No	Code	Course Title	L	T	P	C	Category
			Hours/Week				
1	EE3005	Digital Signal Processing	3	-	-	3	PT
2	EE3006	Power Systems - II	3	-	-	3	PT
3	EE3007	Power Electronics	3	-	-	3	PT
4		Elective - 3	3	-	-	3	PT
5		Elective - 4	3	-	-	3	PT
6	EE3008	Environmental Studies for Electrical Engineers	3	-	-	3	OT
7	EE3092	Electrical Machines Lab - II	-	-	3	2	PT
8	EE3093	Mini Project	-	-	3	2	PT
		Total Credits	**18**	**-**	**6**	**22**	

Semester 7

Sl No	Code	Course Title	L	T	P	C	Category
			Hours/Week				**Category**
1	MS4003	Economics	3	-	-	3	HL
2	EE4001	Control Systems - II	3	-	-	3	PT
3	EE4090	Electrical Engineering Drawing	1	-	3	3	PT
4		Elective - 5	3	-	-	3	PT
5		Elective - 6	3	-	-	3	FE
6	EE4091	Power Engineering Lab	-	-	3	2	PT
7	EE4092	Project	-	-	3	2	PT
		Total Credits	**13**	**-**	**9**	**19**	

Semester 8

Sl No	Code	Course Title	L	T	P	C	Category
			Hours/Week				**Category**
1	ME4104	Principles of Management	3	-	-	3	PT
2	EE4002	Instrumentation Systems	3	-	-	3	PT
3		Elective - 7	3	-	-	3	PT
4		Elective - 8	3	-	-	3	FE
5	EE4093	Seminar	-	2	-	1	PT
6	EE4094	Control Systems Lab	-	3	-	2	PT
7	EE4095	Project	-	6	-	4	PT
		Total Credits	**12**	**11**	**-**	**19**	

LIST OF ELECTIVES

EE3021 Electrical Engineering Materials	EE3022 Network Analysis & Synthesis
EE3023 Optimization Techniques and Algorithms	EE3024 Special Machines and Linear Machines
EE3025 Electric Power Utilization	EE3026 Dynamic Analysis of Electrical Machines
EE3027 Linear System Theory	EE3028 High Voltage Engineering
EE3029 Non-conventional Energy Systems and Applications	EE3030 Applications of Analog Integrated Circuits
EE3031 Dynamic System Simulation	EE3032 Digital Control Systems
EE3033 Fuzzy Logic Systems	EE3034 Electrical Machine Design
EE3035 Biomedical Instrumentation	EE3036 Illumination Engineering
EE3037 Analog Filters	EE3038 Power Semiconductor Devices
EE3039 Advanced Processor Architecture and System Organization	EE3040 LT & HT Distribution Systems
EE3041 DC Drives	EE3042 Electrical System Design for Buildings
EE4021 Artificial Neural Networks and Genetic Algorithms	EE4022 AC Drives
EE4023 Computer Control of Industrial Processes	EE4024 Power System Operation and Control
EE4025 Analog MOS Circuits	EE4026 Switched-mode Power Supplies
EE4027 Bio-Signal Processing	EE4028 Power System Reliability and Deregulation
EE4029 Control & Guidance Engineering	EE4030 Switchgear and Protection
EE4031 Advanced Digital Signal Processing	EE4032 Static VAr Compensation and Harmonic Filtering
EE4033 Optimal and Adaptive Control	EE4034 Power System Stability and Control
EE4035 Flexible AC Transmission	EE4036 Non-linear System Analysis
EE4037 Energy Auditing, Conservation and Management	EE4038 Data Acquisition and Signal Conditioning
EE4039 Advanced DC – AC Power Conversion	EE4040 System Identification and Parameter Estimation
EE4041 Power Quality	EE4042 Digital Protective Relaying

B.Tech - ENGINEERING PHYSICS.

Semester 1

Sl No	Code	Title	L	T	P	C	Category
			Hours/Week				
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	0	0	3	BS
3	MH1001/EE1001	Professional Communication / Basic Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics / Engineering Graphics	3 1	0 0	0 3	3	ES/TA
5	PH1002/ZZ1004	Introduction to Engineering Physics Profession/Computer Programming	2	0	0	2	PT
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/CY1091	Physics Lab./ Chemistry Lab.	0	0	2	1	BS
8	ZZ1094/ZZ1093/ ZZ1095	OT(Value Education(1), Physical Education(1), NSS(1)	-	-	-	3*	OT
	Total		14/ 12	1	5/8	17+3*	

Semester 2

Sl No	Code	Title	L	T	P	C	Category
			Hours/Week				
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/PH1001	Chemistry / Physics	3	0	0	3	BS
3	EE1001/MH1001	Electrical Sciences/ Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA/ES
5	ZZ1004 /PH1002	Computer Programming / Introduction to Engineering Physics Profession	2	0	0	2	PT
6	CY1094/PH1091	Chemistry Lab./ Physics Lab	0	0	2	1	BS
7	ZZ1092/ZZ1091	Workshop II / Workshop I	0	0	3	2	TA
	Total		12/ 14	1	8/5	17	

Semester 3

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				
1	MA2001	Mathematics III	3	1	0	3	BS
2	PH2001	Classical Mechanics	4	0	0	4	PT
3	PH2002	Thermodynamics	3	0	0	3	PT
4	PH2003	Optics	3	0	0	3	PT
5	PH2004	Electromagnetics	4	0	0	4	PT
6	CY2001	Physical Chemistry	3	0	0	3	PT
7	PH2091	Physics Lab -II (general Physics)	0	0	3	2	PT
	Total		20	1	3	22	

Semester 4

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				Category
1	MA2002	Mathematics IV	3	1	0	3	BS
2	PH2005	Quantum Mechanics	4	0	0	4	PT
3	PH2006	Statistical Physics	4	0	0	4	PT
4	PH2007	Analog & Digital Electronics	3	0	0	3	PT
5	PH2008	Applied Electromagnetics	3	0	0	3	PT
6	CY2002	Organic Chemistry	3	0	0	3	PT
7	PH2092	Physics Lab –III (Electronics)	0	0	3	2	PT
		Total	20	1	3	22	

Semester 5

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				Category
1	PH3001	Applied Quantum Mechanics	4	0	0	4	PT
2	PH3002	Condensed Matter Physics	4	0	0	4	PT
3	PH3003	Computational Physics	3	0	0	3	PT
4	BT 2001	Cell Biology	3	0	0	3	PT
5		Elective - I	3	0	0	3	PT
6	CY3093	Chemistry Lab	0	0	3	2	PT
7	PH3091	Physics Lab -IV (Solid State)	0	0	3	2	PT
		Total	17	0	6	21	

Semester 6

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				Category
1	PH3004	Semiconductor Physics and Technology	3	0	0	3	PT
2	PH3005	Lasers and Applications	3	0	0	3	PT
3		Elective - II	3	0	0	3	PT
4	PH3006	Experimental Techniques in Physics	3	0	0	3	PT
5		Elective - III/ Independent Study / Minor project	3	0	0	3	PT
6	PH3007	Environmental Studies	3	0	0	3*	OT
7	PH3092	Physics Lab -V (computational)	0	0	3	2	PT
8	PH3093	Mini Project / Industrial training	0	0	3	1	PT
		Total	18	0	6	18+3*	

Semester 7

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				**Category**
1	PH4001	Introduction to Photonics	3	0	0	3	PT
2	PH4002	Nuclear Science & Engineering	3	0	0	3	PT
3	ME4104	Principles of Management	3	0	0	3	HL
4		Elective - IV	3	0	0	3	PT
5		Elective - V	3	0	0	3	PT
6	PH4051	Seminar	0	0	2	1	PT
7	PH4052	Project	0	0	6	3	PT
Total			15	0	8	19	

Semester8

Sl. No	Code	Title	L	T	P	C	Category
			Hours/Week				**Category**
1	MS4003	Economics	3	0	0	3	HL
2	PH4004	Physics of Nanostructures and Nanoscale Devices	3	0	0	3	PT
3		Elective - VI	3	0	0	3	PT
4		Elective - VII	3	0	0	3	PT
5	PH4053	Project	0	0	12	6	PT
Total			12	0	12	18	

Total Credit for the Course = 154+6OT = 160

LIST OF ELECTIVES

Sl. No	Code	Title	Credits
1	PH3021	Fiber Optics	3
2	PH3022	Atmospheric and Environmental Physics	3
3	PH3023	Optical Engineering	3
4	PH3024	Thin film technology	3
5	PH4021	Unconventional Electronics	3
6	PH4022	Introduction to Optoelectronics	3
7	PH4023	Relativity and Gravitation	3
8	PH4024	Nano Photonics	3
9	PH4025	Light-Matter interaction in Resonators	3
10	PH4026	Introduction to Critical phenomena	3

B.Tech - MECHANICAL ENGINEERING.

Semester 1

No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	0	0	3	BS
3	MS1001/ EE1001	Professional Communication / Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics / Engineering Graphics	3 1	0 0	0 3	3	ES/TA
5	ZZ1004/ME1001	Computer Programming/ Introduction to Mechanical Engineering	2	0	0	2	PT/ES
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/PY1094	Physics Lab./ Chemistry Lab.	0	0	2	1	BS
8	ZZ1094/ ZZ1093/ZZ1095	OT(Value Education(1), Physical Education(1), NSS(1)	-	-	-	3*	OT
Total			14/ 12	1	3/6	17+3*	

*Three courses of one credit each are to be credited within the first four semesters.

Semester 2

No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/PH1001	Chemistry / Physics	3	0	0	3	BS
3	EE1001/MS1001	Electrical Sciences/ Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA/ES
5	ME1001/ ZZ1004	Introduction to Mechanical Engineering/ Computer Programming	2	0	0	2	ES/PT
6	CY1094/PH1091	Chemistry Lab./ Physics Lab	0	0	2	1	BS
7	ZZ1092/ZZ1091	Workshop II / Workshop I	0	0	3	2	TA
Total			12/ 14	1	3/6	17	

Semester 3

No	Code	Subject	L	T	P	C	Category
1	MA2001	Mathematics III	3	1	0	3	BS
2	EE2009	Electrical Measurements and Machines	3	0	0	3	PT
3	ME2001	Mechanics of Fluids	3	0	0	3	PT
4	ME2002	Elements of Solid Mechanics	3	0	0	3	PT
5	ME2003	Engineering Mechanics – Dynamics	3	0	0	3	PT
6	ME2101	Materials Science and Metallurgy	3	0	0	3	PT
7	ME2091	Machine Drawing	0	0	3	2	PT
8	EE2094	Electrical Measurements and Machines Laboratory	0	0	3	2	PT
		Total	18	1	6	22	

Semester 4

No	Code	Subject	L	T	P	C	Category
1	MA2002	Mathematics IV	3	1	0	3	BS
2	ME2011	Fluid Machinery	3	0	0	3	PT
3	ME2012	Applied Mechanics of Solids	3	0	0	3	PT
4	ME2013	Mechanics of Machinery	3	0	0	3	PT
5	ME2014	Thermodynamics	3	0	0	3	PT
6	ME2111	Essentials of Management	3	0	0	3	HL
7	ME2092	Fluid Mechanics & Fluid Machinery Laboratory	0	0	3	2	PT
8	CE2095	Strength of Materials Laboratory	0	0	3	2	PT
		Total	18	1	6	22	

Semester 5

No	Code	Subject	L	T	P	C	Category
1	ME3001	Dynamics of Machinery	3	0	0	3	PT
2	ME3002	Principles of Heat Transfer	3	0	0	3	PT
3	ME3101	Management of Production Systems	3	0	0	3	PT
4	ME3102	Manufacturing Science	3	0	0	3	PT
5		Elective I	3	0	0	3	PT
6	ME3003	Environmental Studies for Mechanical Engineers	3	0	0	3*	OT
7	ME3091	Heat Transfer Laboratory	0	0	3	2	PT
8	ME3191	Production Engineering Laboratory I	0	0	3	2	PT
		Total	18	0	6	19+3*	

Semester 6

No	Code	Subject	L	T	P	C	Category
			Hours/Week				

No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	ME3111	Machining Science and Machine Tools	4	0	0	4	PT
2	ME3112	Metrology and Instrumentation	3	0	0	3	PT
3	ME3011	Gas Dynamics	3	0	0	3	PT
4	ME3012	Thermal Engineering I	3	0	0	3	PT
5		Elective II	3	0	0	3	PT
6	ME3192	Metrology and Instrumentation Laboratory	0	0	3	2	PT
7	ME3193	Production Engineering Laboratory II	0	0	3	2	PT
		Total	16	0	6	20	

Semester 7

No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	ME4001	Machine Design I	3	0	0	3	PT
2	ME4002	Thermal Engineering II	3	0	0	3	PT
3	ME4101	Operations Research	3	0	0	3	PT
4		Elective III	3	0	0	3	GE
5	ME4091	Heat Engines Laboratory	0	0	3	2	PT
6	ME4191	CAD/CAM Laboratory	0	0	3	2	PT
7	ME4098	Project	0	0	3	3	PR
		Total	12	0	9	19	

Semester 8

No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	ME4011	Machine Design II	3	0	0	3	PT
2	MS4004	Industrial Economics	3	0	0	3	HL
3		Elective IV	3	0	0	3	PT
4		Elective V	3	0	0	3	GE
5	ME4097	Seminar	0	0	3	1	PR
6	ME4099	Project	0	0	5	5	PR
		Total	12	0	8	18	

Category-wise Credits

Code	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL
BS	7	7	3	3	0	0	0	0	**20**
ES	3	5	0	0	0	0	0	0	**8**
HL	3	0	0	3	0	0	0	3	**9**
TA	2	5	0	0	0	0	0	0	**7**
PT	2	0	19	16	19	20	13	6	**95**
PR	0	0	0	0	0	0	3	6	**9**
GE	0	0	0	0	0	0	3	3	**6**
OT	3*	0	0	0	3*	0	0	0	**6***
Total	**17+3***	**17**	**22**	**22**	**19+3***	**20**	**19**	**18**	**154+6***

List of Electives

No.	Code	Subject
1	ME3021	Introduction to Finite Element Methods
2	ME3022	Experimental Stress Analysis
3	ME3023	Theory of Plasticity
4	ME3024	Control Systems Engineering
5	ME3025	Nonlinear Dynamics and Chaos
6	ME3026	Engineering Fracture Mechanics
7	ME3027	Fluid Power Controls
8	ME3028	Advanced Thermodynamics
9	ME3029	Computational Methods in Engineering
10	ME3121	Powder Metallurgy
11	ME3122	Introduction to Marketing
12	ME3123	Design and Analysis of Management Information Systems
13	ME3124	Work Design and Measurement
14	ME3125	Cost Analysis and Control
15	ME3126	Supply Chain Management
16	ME3127	Management of Organisational Behaviour
17	ME3128	Production Planning and Control
18	ME3129	Management of Human Resources
19	ME3130	Quality Planning and Analysis
20	ME4021	Industrial Tribology
21	ME4022	Vehicle Dynamics
22	ME4023	Introduction to Robotics
23	ME4024	Design for Manufacturability
24	ME4025	Mechatronics
25	ME4026	Unconventional Energy Systems
26	ME4027	Computational Fluid Dynamics
27	ME4028	Aerodynamics
28	ME4029	Heating, Ventilation and Air Conditioning
29	ME4030	Fundamentals of Combustion
30	ME4031	Refrigerating and Air Conditioning Systems
31	ME4032	Automobile Engineering
32	ME4033	Introduction to Computer Graphics
33	ME4034	Experimental Methods in Fluid Flow and Heat Transfer
34	ME4122	Mechanical Behaviour and Testing of Materials
35	ME4123	Technology Management
36	ME4125	Competitive Manufacturing Management
37	ME4126	Engineering Optimization
38	ME4127	Accounting and Finance for Engineers
39	ME4128	Simulation Modelling and Analysis
40	ME4129	Modelling of Manufacturing Systems
41	ME4130	Human Factors in Engineering and Design
42	ME3114	CAD/CAM/CIM

B.Tech - PRODUCTION ENGINEERING

Semester 1

No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1001	Mathematics I	3	1	0	3	BS
2	PH1001/CY1001	Physics / Chemistry	3	0	0	3	BS
3	MH1001/ EE1001	Professional Communication / Electrical Sciences	3	0	0	3	HL/ES
4	ZZ1001/ZZ1002	Engineering Mechanics / Engineering Graphics	3 1	0 0	0 3	3	ES/TA
5	ME1001/ ZZ1004	Introduction to Mechanical Engineering / Computer Programming	2	0	0	2	PT/ES
6	ZZ1091/ZZ1092	Workshop I / Workshop II	0	0	3	2	TA
7	PH1091/PY1094	Physics Lab./ Chemistry Lab.	0	0	2	1	BS
8	ZZ1094/ ZZ1093/ ZZ1095	OT(Value Education(1), Physical Education(1), NSS(1)	-	-	-	3*	OT
		Total	14/ 12	1	3/6	17+3*	

*Three courses of one credit each are to be credited within the first four semesters.

Semester 2

No	Code	Subject	Hours/Week				Category
			L	**T**	**P**	**C**	
1	MA1002	Mathematics II	3	1	0	3	BS
2	CY1001/PH1001	Chemistry / Physics	3	0	0	3	BS
3	EE1001/MH1001	Electrical Sciences/ Professional Communication	3	0	0	3	ES/HL
4	ZZ1002/ZZ1001	Engineering Graphics/ Engineering Mechanics	1 3	0 0	3 0	3	TA/ES
5	ZZ1004 / ME1001	Computer Programming / Introduction to Mechanical Engineering	2	0	0	2	ES/PT
6	CY1094/PH1091	Chemistry Lab./ Physics Lab	0	0	2	1	BS
7	ZZ1092/ZZ1091	Workshop II / Workshop I	0	0	3	2	TA
		Total	12/ 14	1	3/6	17	

Semester 3

No	Code	Subject	L	T	P	C	Category
1	MA2001	Mathematics III	3	1	0	3	BS
2	EE2009	Electrical Measurements and Machines	3	0	0	3	PT
3	ME2002	Elements of Solid Mechanics	3	0	0	3	PT
4	ME2003	Engineering Mechanics –Dynamics	3	0	0	3	PT
5	ME2004	Fluid Mechanics and Machinery	3	0	0	3	PT
6	ME2101	Materials Science and Metallurgy	3	0	0	3	PT
7	ME2091	Machine Drawing	0	0	3	2	PT
8	CE2095	Strength of Materials Laboratory	0	0	3	2	PT
		Total	18	1	6	22	

Semester 4

No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	MA2002	Mathematics IV	3	1	0	3	BS
2	ME2013	Mechanics of Machinery	3	0	0	3	PT
3	ME2015	Theory of Elasticity and Plasticity	3	0	0	3	PT
4	ME2016	Thermodynamics and Heat Transfer	3	0	0	3	PT
5	ME2111	Essentials of Management	3	0	0	3	HL
6	ME2112	Metal Casting and Joining	3	0	0	3	PT
7	ME2092	Fluid Mechanics and Fluid Machinery Laboratory	0	0	3	2	PT
8	ME2191	Production Technology Laboratory I	0	0	3	2	PT
		Total	18	1	6	22	

Semester 5

No	Code	Subject	Hours/Week				Category
			L	T	P	C	
1	ME3001	Dynamics of Machinery	3	0	0	3	PT
2	ME3103	Machine Tools	3	0	0	3	PT
3	ME3104	Metrology and Computer Aided Inspection	3	0	0	3	PT
4	ME3105	Production Management	4	0	0	4	PT
5		Elective I	3	0	0	3	PT
6	ME3003	Environmental Studies for Mechanical Engineers	3	0	0	3*	OT
7	ME3192	Metrology and Instrumentation Laboratory	0	0	3	2	PT
8	ME3194	Production Technology Laboratory II	0	0	3	2	PT
		Total	19	0	6	20+3*	

Semester 6

No	Code	Subject	L	T	P	C	Category
			Hours/Week				**Category**
1	ME3113	Quantitative Techniques for Management	3	0	0	3	PT
2	ME3114	CAD/CAM/CIM	3	0	0	3	PT
3	ME3013	Thermal Engineering	3	0	0	3	PT
4	ME3014	Design of Machine Elements	4	0	0	4	PT
5		Elective II	3	0	0	3	PT
6	ME3195	CAD/CAM/CIM Laboratory	0	0	3	2	PT
7	ME3092	Thermal Engineering Laboratory	0	0	3	2	PT
		Total	16	0	6	20	

Semester 7

No	Code	Subject	L	T	P	C	Category
			Hours/Week				**Category**
1	ME4102	Theory of Metal Cutting	4	0	0	4	PT
2	ME4103	Tool Engineering and Design	4	0	0	4	PT
3		Elective III	3	0	0	3	GE
4	ME4192	Management Science Laboratory	0	0	3	2	PT
5	ME4193	Metal Cutting Laboratory	0	0	3	2	PT
6	ME4098	Project	0	0	3	3	PR
		Total	11	0	9	18	

Semester 8

No	Code	Subject	L	T	P	C	Category
			Hours/Week				**Category**
1	ME4111	Industrial Engineering	3	0	0	3	PT
2	MS4004	Industrial Economics	3	0	0	3	HL
3		Elective IV	3	0	0	3	PT
4		Elective V	3	0	0	3	GE
5	ME4097	Seminar	0	0	3	1	PR
6	ME4099	Project	0	0	5	5	PR
		Total	12	0	8	18	

Category-wise Credits

Code	S1	S2	S3	S4	S5	S6	S7	S8	TOTAL
BS	7	7	3	3	0	0	0	0	**20**
ES	3	5	0	0	0	0	0	0	**8**
HL	3	0	0	3	0	0	0	3	**9**
TA	2	5	0	0	0	0	0	0	**7**
PT	2	0	19	16	20	20	12	6	**95**
PR	0	0	0	0	0	0	3	6	**9**
GE	0	0	0	0	0	0	3	3	**6**
OT	3*	0	0	0	3*	0	0	0	**6***
Total	**17+3***	**17**	**22**	**22**	**20+3***	**20**	**18**	**18**	**154+6***

List of Electives

No.	Code	Subject
1	ME3021	Introduction to Finite Element Methods
2	ME3022	Experimental Stress Analysis
3	ME3023	Theory of Plasticity
4	ME3024	Control Systems Engineering
5	ME3025	Nonlinear Dynamics and Chaos
6	ME3026	Engineering Fracture Mechanics
7	ME3027	Fluid Power Controls
8	ME3028	Advanced Thermodynamics
9	ME3029	Computational Methods in Engineering
10	ME3121	Powder Metallurgy
11	ME3122	Introduction to Marketing
12	ME3123	Design and Analysis of Management Information Systems
13	ME3124	Work Design and Measurement
14	ME3125	Cost Analysis and Control
15	ME3126	Supply Chain Management
16	ME3127	Management of Organisational Behaviour
17	ME3128	Production Planning and Control
18	ME3129	Management of Human Resources
19	ME3130	Quality Planning and Analysis
20	ME4021	Industrial Tribology
21	ME4022	Vehicle Dynamics
22	ME4023	Introduction to Robotics
23	ME4024	Design for Manufacturability
24	ME4025	Mechatronics
25	ME4026	Unconventional Energy Systems
26	ME4027	Computational Fluid Dynamics
27	ME4028	Aerodynamics
28	ME4029	Heating, Ventilation and Air Conditioning
29	ME4030	Fundamentals of Combustion
30	ME4031	Refrigerating and Air Conditioning Systems
31	ME4032	Automobile Engineering
32	ME4033	Introduction to Computer Graphics
33	ME4034	Experimental Methods in Fluid Flow and Heat Transfer
34	ME4122	Mechanical Behaviour and Testing of Materials
35	ME4123	Technology Management
36	ME4125	Competitive Manufacturing Management
37	ME4126	Engineering Optimization
38	ME4127	Accounting and Finance for Engineers
39	ME4128	Simulation Modelling and Analysis
40	ME4129	Modelling of Manufacturing Systems
41	ME4130	Human Factors in Engineering and Design

www.nitc.ac.in

National Institute of Technology Calicut
NIT Campus P.O., Calicut – 673601
Kerala, India