

Requirement for Minor in Computer Science & Engineering

(Six theory courses and one lab course)

Important Instructions:

1. A total of 6 theory courses must be taken.
2. The courses marked with * are compulsory.
3. For Electives I, II and III, CSE department electives of B.Tech/M.Tech level may be chosen.
4. The course Design and Analysis of Algorithms (Course No. MA30207) offered by Mathematics department in 3rd year can be taken in lieu of theory course Algorithms - I (Course No. CS21203) but the Algorithms Laboratory (Course No. CS29203) must be taken.

Sl No.	Course Number	Course Name	L-T-P	Credits
1*	CS21203 OR MA30207	Algorithms - I OR Design and Analysis of Algorithms (offered by Mathematics Dept.)	3-1-0	4
2*	CS29203	Algorithms Laboratory	0-0-3	2
3*	CS21202 OR EC21202	Switching Circuits and Logic Design OR Digital Electronic Circuits (offered by E&ECE Dept.)	3-1-0	4
4*	CS31702	Computer Architecture and Operating Systems	4-0-0	4
5		Elective – I	3-0-0	3
6		Elective – II	3-0-0	3
7		Elective – III	3-0-0	3

Requirements for Earning a *Minor in Chemical Engineering*

The following three theory and one laboratory courses are **compulsory** for earning a **Minor in Chemical Engineering**.

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|---------------------------------------|-----------------|
| 1. Mass Transfer I (CH21202) | 3-1-0 4 credits |
| 2. Reaction Engineering (CH21206) | 3-1-0 4 credits |
| 3. Transport Phenomena (CH30012) | 3-1-0 4 credits |
| 4. Mass Transfer Laboratory (CH39006) | 0-0-3 2 Credits |

Any three of the following courses are to be taken for completing the **Minor** requirements.

Sub. No.	Subject Name	Semester	Prerequisite	L-T-P	Credits
CH21207	Fluid Mechanics	3	None	3-1-0	4
CH21204	Heat Transfer	4	None	3-1-0	4
CH21201	Chemical Engg. Thermodynamics	3	None	3-1-0	4
CH21205	Mechanical Operations	3	None	3-1-0	4
CH31010	Mass Transfer II	5	CH21202	3-1-0	4
CH21208	Instrumentation and Process Control	4	Transform Calculus (MA20202) & Fluid Mechanics (CH21207)	3-1-0	4
CH31203	Computer Aided Process Engineering	5	Transform Calculus (MA20202) & CH21202	3-1-0	4

Minor requirement in Biotechnology and Biochemical engineering

(Six theory subjects and Three lab courses)

Course No.	Course Name	L	T	P	Credits
BT20203	BIOCHEMISTRY	3	0	0	3
BT20205	MICROBIOLOGY	3	0	0	3
BT20207	BIOCHEMICAL REACTION ENGINEERING & BIOENERGETICS	3	0	0	3
BT29205	MICROBIOLOGY LAB	0	0	3	2
BT29207	BIOCHEMICAL ENGINEERING LAB	0	0	3	2
BT20204	CELL AND MOLECULAR BIOLOGY	3	0	0	3
BTXXXXX (Old Number BT40009)	BIOPROCESS TECHNOLOGY	3	0	0	3
BT31006	BIOINFORMATICS	3	0	0	3
BT39008	BIOINFORMATICS LAB	0	0	3	2
TOTAL					24

REQUIREMENT FOR MINOR IN AEROSPACE ENGINEERING

Following courses need to be taken to earn a Minor in Aerospace Engineering

Sl. No.	Subject No.- New number (Old number)	Subject Name	Semester	Prerequisite	L-T-P	Credit
1	AE21201 (AE21001)	Introduction to Aerodynamics	3rd	None	3-1-0	4
2	AE21205 (AE31001)	Thermodynamics and Aerospace Propulsion Systems	3rd	None	3-1-0	4
3	AE21202 (AE21002)	Low Speed Aerodynamics	4th	AE21201	3-1-0	4
4	AE29202 (AE29002)	Aerodynamics Laboratory - I	4th	AE21201	0-0-3	2
5	AE21204 (AE21004)	Introduction to Aerospace Structures	4th	None	3-1-0	4
6	AE29204 (AE29004)	Structures Laboratory - I	4th	None	0-0-3	2
7	AE31007 (AE31007)	Mechanics of Flight	5th	AE21201	3-1-0	4
						24

PROPOSAL FOR MINOR IN PHYSICS

Note: Subject number is given if it exists already. Semester number in the brackets specifies where the subject is placed in the BS curriculum.

Subject	Type	L-T-P	Credit
Electromagnetism PH21203 (Sem 3) OR Electrodynamics (Sem 5)	Core	3-1-0	4
Quantum Physics PH21206 (Sem 4) OR Quantum Mechanics (Sem 5)	Core	3-1-0	4
Classical Dynamics and Special Relativity PH21201 (Sem 3) OR Classical Mechanics (Sem 5)	Core	3-1-0	4
Statistical Physics (Sem 6)	Core	3-1-0	4
Elective 1*	Elective	3-0-0	3
Elective 2*	Elective	3-0-0	3
Laboratory [#]	Lab	0-0-3	2
Total credits			24

* All listed electives in the BS curriculum are available for aspiring Minor students. In addition, all 3rd and 4th year BS core courses (except the Computational Physics course) which are NOT included in the Minor Core list may be taken as Electives by students opting for Minor.

[#] Any BS 3rd year lab course (except Computational Physics Lab) can be taken as a Lab course by a Minor aspirant.

REQUIREMENT FOR MINOR IN “CLIMATE SCIENCE” OF CORAL

Subject Number	Subject Name	Semester	L-T-P	Credit
All are Compulsory subjects (12 Credits)				
CL60216	Physics of Climate System	2	3-0-0	3
CL60210	Climate Modelling	2	3-0-0	3
CL61203	Computational Methods for Earth System Science	1	3-1-0	4
CL67022	Project I	2	0-0-3	2
Elective (Any four for 12 Credits)				
CL61011	Global Climate System and Cloud-Precipitation Processes	2	3-1-0	4
CL61206	Satellite Remote Sensing Exploration of the Ocean and Climate	2	3-1-0	4
CL60015	Modelling of Extreme Events	1	3-0-0	3
CL60207	Weather Analysis and Prediction	1	3-0-0	3
CL60019	Carbon Cycle and Global Climate Change	1	3-0-0	3
CL60201	Physical Oceanography and Climate	1	3-0-0	3

REQUIREMENT FOR MINOR IN AGRICULTURAL AND FOOD ENGINEERING

Subject Number	Subject Name	Semester	Pre-requisite	L-T-P	Credit
AG31003	Core Subjects Land and Water Resources Engineering	5 th	None	3-1-0	4
AG31005	Principles of Food Engineering	5 th	None	3-1-0	4
New	Off- Road Vehicle Systems	6 th	None	3-0-0	3
AG39003	Laboratory Subjects (any two) Land and Water Resources Engineering Lab	5 th	None	0-0-3	2
AG39005	Food Engineering Lab	5 th	None	0-0-3	2
New	Off- Road Vehicle Systems Lab	6 th	None	0-0-3	2
AG20101	Elective I (any one) Crop Production Technology	4 th	None	3-0-0	3
AG20103	Soil Technology	3 rd	None	3-0-0	3
New	Biotechnological Interventions in Modern Agriculture	5 th	None	3-0-0	3
New	Elective – II (any one) Farm Machinery	5 th	None	3-0-0	3
New	Manufacturing Practices	5 th	None	3-0-0	3
AG40005	Uncertainty Concepts in Hydrosystem Engineering	7 th	None	3-0-0	3
	Mechanical Operations in Food Processing				
New	Elective – III (any one) Automation of Agricultural Machines	5 th	None	3-0-0	3
AG40011	Tube wells and Pumps	7 th	None	3-0-0	3
AG40015	Thermal Operations in Food Processing	7 th	None	3-0-0	3

DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

MINOR IN INDUSTRIAL ENGINEERING

Pre-requisite, six theory subjects and one laboratory subject need be taken as listed:

PRE-REQUISITE

SL	Sub. No.	Subject Name	L-T-P	C	Prerequisite
1.	MA20205	Probability and Statistics	3-0-0	3	

COMPULSORY SUBJECTS (TOTAL THREE)

SL	Sub. No.	Subject Name	L-T-P	C	Prerequisite
1.		Operations Research-I*	3-1-0	4	None
2.		Work System Design	3-0-0	3	None
3.		Production Planning and Control	3-1-0	4	OR-I*

*Operations Research (IM20204) or Operations Research (MA30014) may be considered as substitute

COMPULSORY LABORATORY

1.		Operations Research Laboratory**	0-0-3	2	OR-I*
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** Operations Research Laboratory (MA39014) may be considered as substitute

ELECTIVE SUBJECTS (ANY THREE)

SL	Sub. No.	Subject Name	L-T-P	C	Prerequisite
1.		Operations Research –II	3-1-0	4	OR-I*
2.		Production Design and Process Planning	3-1-0	4	OR-I*
3.		Engineering Economy	3-1-0	4	None
4.		Quality Design and Control	3-1-0	4	OR-I* Probability and Statistics
5.		Simulation	3-0-0	3	OR-I*
6.		Supply Chain Management	3-1-0	4	OR-I*
7.		Management of Inventory Systems	3-1-0	4	PPC
8.		Statistical Learning with Applications	3-1-0	4	OR-I* Probability and Statistics

*Operations Research (IM20204) or Operations Research (MA30014) may be considered as substitute

Proposed Curriculum for

Minor in Chemistry

Requirement:

Group I subjects are compulsory; minimum one from Gr. II and minimum three from Gr. III

Group	Number	Subject	L-T-P	Credit
I	CY21203	Molecular Structure and Bonding	3-1-0=4	4
I	CY21205	Fundamentals of Organic Reactions	3-1-0=4	4
I	CY20202	Physical Chemistry 2	3-0-0=3	3
II	CY29201	Physical Chem Lab 1	0-0-3=2	2
II	CY29202	Organic Chem Lab 1	0-0-3=2	2
II	CY29204	Inorganic qualitative analysis Lab	0-0-3=2	2
III		Introduction to Quantum Chemistry and Spectroscopy	3-1-0=4	4
III		Computational Chemistry	2-0-3=4	4
III		Biophysical Chemistry	3-1-0=4	4
III		Polymer Chemistry	3-0-0=3	3
III		Instrumental Methods of Analysis	3-0-0=3	3
III		Analytical and Nuclear Chemistry	3-0-0=3	3
III		Metal Complexes in Catalysis	3-1-0=4	4
III		Chemistry of Materials	3-1-0=4	4
III		Spectroscopic Methods of Structure Determination	3-1-0=4	4
III		Structure and function of Biomolecules	3-1-0=4	4
III		Enzymes in Organic Synthesis	3-0-0=3	3
III		Drug Design and Development	3-0-0=3	3

REQUIREMENTS FOR MINOR IN ECONOMICS (NEW CURRICULUM)

Six theory and one laboratory subjects are to be chosen to earn a Minor in Economics. Group A courses are compulsory. From group B and C each, any two subjects should be selected covering any one Lab subject under group C. From D, any one subject should be selected.

GROUP A (Compulsory Subjects)					
Sl. No.	Subject No.	Subject Name	L-T-P	Credit	Prerequisites
1	HSXXXXXX	Microeconomics I	3-1-0	4	None
2	HSXXXXXX	Macroeconomics I	3-1-0	4	None

GROUP B (Any Two Subjects)					
Sl. No.	Subject No.	Subject Name	L-T-P	Credit	Prerequisites
1	HSXXXXXX	Public Finance	3-1-0	4	Microeconomics I/ Economics (HS21201)
2	HSXXXXXX	Economics of Growth	3-0-0	3	Macroeconomics I
3	HSXXXXXX	General Equilibrium & Welfare Economics	3-0-0	3	Microeconomics I
4	HSXXXXXX	International Economics I	3-1-0	4	Microeconomics I
5	HSXXXXXX	Monetary Economics	3-0-0	3	Macroeconomics I
6	HSXXXXXX	Theory of Social Choice	3-0-0	3	General Equilibrium and Welfare Economics
7	HSXXXXXX	Behavioural Economics	3-0-0	3	Microeconomics I and Macroeconomics I

GROUP C (Two Subjects Covering Any One Theory and Any One Lab Course)					
Sl. No.	Subject No.	Subject Name	L-T-P	Credit	Prerequisites
1	HSXXXXXX	Econometric Analysis I	3-0-0	3	Probability and Statistics/Statistics for Economics
2	HSXXXXXX	Econometric Analysis I Lab	0-0-3	2	Econometric Analysis I
3	HSXXXXXX	Economic Data Analysis Lab	0-0-3	2	None
4	HSXXXXXX	Primary Research Lab	0-0-3	2	None
5	HSXXXXXX	Economic Decisions Lab	0-0-3	2	Microeconomics II
6	HSXXXXXX	Economic Modelling	3-0-0	3	Microeconomics I and Macroeconomics I

GROUP D (Any One Subject)					
Sl. No.	Subject No.	Subject Name	L-T-P	Credit	Prerequisites
1	HSXXXXXX	Indian Economy	3-0-0	3	None
2	HSXXXXXX	Development Economics	3-1-0	4	None
3	HSXXXXXX	Public Policy	2-1-0	3	None
4	HSXXXXXX	Labour Economics and Policy	3-1-0	4	Microeconomics I/Economics (HS21201)
5	HSXXXXXX	Environmental Economics	3-0-0	3	Microeconomics I/Economics (HS21201)
6	HSXXXXXX	Food Security and Poverty Studies	3-0-0	3	None
7	HSXXXXXX	Economics of Sustainable Development	3-0-0	3	None
8	HSXXXXXX	Energy Economics and Policy	3-0-0	3	None

Requirement for Minor In Geology

For a minor in Geology, a student must take subjects listed against **Serial No. 1,2,3, are compulsory**. In addition, a student has to take any three from the rest. The pre-requisites for the subjects will be the same as stated previously.

Mining Engineering students who have already cleared similar courses as mention in Serial No. 1 are exempted for the compulsory Serial Number 1.

(Minimum credits as per institute rule need to be earned for a Minor in Geology).

S L.	SUBJECT CODE	NAME OF SUBJECT	L	T	P	C
1	GG21207	INTRODUCTION TO EARTH SCIENCE	4	0	0	4
	GG29209	INTRODUCTORY EARTH SCIENCE LAB	0	0	3	2
2	GG20211	MINERALOGY	3	0	0	3
	GG29206	OPTICAL MINERALOGY LAB	0	0	3	2
3	GG20210	PALEONTOLOGY AND STRATIGRAPHY	3	0	0	3
4	GG30208	ECONOMIC GEOLOGY	3	0	0	3
	GG39204	ECONOMIC GEOLOGY LAB	0	0	3	2
5	GG30216	IGNEOUS PETROLOGY	3	0	0	3
6	GG30210	METAMORPHIC PETROLOGY	3	0	0	3
7	GG20203	SEDIMENTOLOGY	3	0	0	3
8	GG21204	STRUCTURAL GEOLOGY	3	1	0	4
9	GG40218	REMOTE SENSING AND GIS	3	0	0	3
	GG49210	REMOTE SENSING AND GIS LABORATORY	0	0	3	2
10	GG30217	ENGINEERING GEOLOGY	3	0	0	3
11	GG40214	HYDROGEOLOGY	3	0	0	3
12	GG30211	GEOCHEMISTRY	3	0	0	3
	GG39201	GEOCHEMISTRY LAB	0	0	3	2

Requirements for Minor In GEOPHYSICS

Any six subjects ***with at least one subject with a Lab*** from the below list can be chosen to earn a ***Minor in Geophysics***. **Partial Differential Equations and Transform Calculus remain the prerequisite** for all the courses (Minimum credits as per institute rule need to be earned for a Minor in Geophysics)..

S L.	SUBJECT CODE	NAME OF SUBJECT	L	T	P	C
1	GG20205	INTRODUCTORY GEOPHYSICS	3	0	0	3
2	GG21202	GEOPHYSICAL SIGNAL PROCESSING	3	0	0	3
3	GG30203	ELECTRICAL METHODS OF PROSPECTING	3	0	0	3
	GG39209	ELECTRICAL METHODS OF PROSPECTING LAB	0	0	3	2
4	GG31203	SEISMIC METHODS OF PROSPECTING	3	1	0	4
	GG39205	SEISMIC METHODS OF PROSPECTING LAB	0	0	3	2
5	GG30212	ELECTROMAGNETIC METHODS OF PROSPECTING	3	0	0	3
	GG39208	ELECTROMAGNETIC METHODS OF PROSPECTING LAB	0	0	3	2
6	GG31201	SEISMOLOGY	3	1	0	4
7	GG31204	GRAVITY & MAGNETIC METHODS OF PROSPECTING	3	1	0	4
	GG39210	GRAVITY & MAGNETIC METHODS OF PROSPECTING LAB	0	0	3	2
8	GG40229	BOREHOLE GEOPHYSICS	3	0	0	3
	GG39207	BOREHOLE GEOPHYSICS LAB	0	0	3	2
9	GG40223	RADIOMETRIC METHODS OF PROSPECTING	3	0	0	3
	GG49207	RADIOMETRIC METHODS OF PROSPECTING LAB	0	0	3	2
10	EX30004	GEOPHYSICAL FIELD THEORY	3	1	0	4
11	GG31202	GEOPHYSICAL INVERSE THEORY	3	1	0	4

REQUIREMENTS FOR MINOR IN MATHEMATICS AND COMPUTING BS 4 year_NEW CURRICULUM

Five theory and two laboratory subjects are to be chosen to earn a minor in Mathematics and Computing with at least one from Group A, at least one from Group B and at least one from Group C.

GROUP A

Sub. No	Sub. Name	Semester In which it is offered	Pre-requisite	L-T-P	Credits
MA21201	Real Analysis	3 rd	Advanced Calculus (MA11003)	3-1-0	4
MA20206	Theory of Computations	4 th		3-0-0	3
MA21202	Modern Algebra	4 th		3-1-0	4
MA30008	Topology	5 th	Real Analysis(MA21201)	3-0-0	3
MAXXXX	Advanced Linear Algebra	6 th	Linear Algebra, Numerical and Complex analysis((MA11004)	3-0-0	3
MA20203	Theory of PDE	3 rd			
MA21007	Design and Analysis of Algorithms	5 th	Programming and Data Structures(CS10003)	3-0-0	3
MA29005	Design and Analysis of Algorithms Laboratory	5 th	LAB course for Design and Analysis of Algorithms(MA21007)	0-0-3	2

GROUP B

Sub. No	Sub. Name	Semester In which it is offered	Pre-requisite	L-T-P	Credits
MA20208	Stochastic process and Applications	4 th	Probability and Statistics	3-0-0	3
MA20204	Applied Computational Methods	4 th	Numerical solution of ordinary and PDE(MA20201)	3-0-0	3
MA29202	Numerical Methods Laboratory	4 th	LAB course for Applied Computational Methods(MA20204)	3-0-0	3
MA61019	Optimization Techniques	5 th		3-0-0	4
MAXXXXX	Optimization Techniques Lab	5 th	Optimization Techniques	0-0-3	2
MAXXXXX	Mathematical Modelling	6 th	Theory of PDE (MA20203)	3-0-0	3
MA51108	Modelling and Simulation Lab	6 th	Mathematical Modelling	0-0-3	2
MA51002	Measure Theory and Integrations	6 th	Real Analysis(MA21201)	3-0-0	3

GROUP C

Sub. No	Sub. Name	Semester In which it is offered	Pre-requisite	L-T-P	Credits
MA31009	Computer Organisation and Architecture	5 th		3-0-0	3
MAXXXX	Computer Organisation and Architecture Lab	5 th	Computer Organisation and Architecture	0-0-3	2
MA40004	File Organization and Database Systems	6 th	Programming and Data Structures(CS10003)	3-0-0	3
MAXXXX	File Organization and Database Systems Lab	6 th	File Organization and Database Systems	0-0-3	2
MAXXXX	AI and ML	8 th		3-0-0	3
MAXXXX	AI and ML LAB	8 th	AI and ML	0-0-3	2
MA41007	Functional Analysis	7 th	Real Analysis(MA21201) or Measure Theory and Integrations MA51002	3-0-0	3

Minor Requirements in Mechanical Engineering

Six subjects and one lab are to be chosen from the following three groups to earn a minor in Mechanical Engineering with at least one subject from each group.

- Total Credit Requirement – Minimum 25

Number	Subject	L-T-P	CREDIT
	GROUP A		
ME31007	Casting Forming & Welding	3-1-0	4
ME3XXXX	Machine Tool & Machining	3-1-0	4
ME39007	<i>Casting Forming & Welding Lab</i>	0-0-3	2
	GROUP B		
ME21101	Fluid Mechanics	3-1-0	4
ME22002	Basic Thermodynamics	3-1-0	4
ME30005	Heat Transfer	3-1-0	4
ME3XXXX	Applied Thermodynamics	3-1-0	4
ME3XXXX	<i>Thermofluids Laboratory</i>	0-0-3	2
ME4XXXX	<i>Thermal Engineering Laboratory</i>	0-0-3	2
	GROUP C		
ME20001	Dynamics	3-1-0	4
ME3XXXX	Kinematics and Kinetics of Machines	3-1-0	4
ME2XXXX	Mechanics of Solids	3-1-0	4
ME30602	<i>Design of Machine Elements</i>	3-1-0	4
ME2XXXX	<i>Mechanics of Solids Lab</i>	0-0-3	2
ME3XXXX	<i>Machine Drawing</i>	0-0-3	2

Minor Requirements in Mechanical Engineering **for Students of Manufacturing Science and Engineering**

All the subjects from Group – A, any three subjects from Group - B and one lab from Group – C are to be chosen to earn a minor in Mechanical Engineering

- Total Credit Requirement – Minimum 23

Number	Subject	L-T-P	CREDIT
	GROUP A		
ME20706	Thermo-Fluid Science	3-1-0	4
ME3XXXX	Kinematics and Kinetics of Machines	3-1-0	4
ME30702	Applied Thermodynamics	3-1-0	4
	GROUP B		
ME60413	Continuum Mechanics	3-1-0	4
ME41610	Automobile Engineering	3-0-0	3
ME41601	Soft Computing	3-0-0	3
ME41603	Vibration and Noise Control	3-0-0	3
ME60103	Machinery Fault Diagnostics and Signal Processing	3-1-0	4
ME40107	Air Conditioning	3-0-0	3
ME60134	Numerical Modelling of Manufacturing Processes	4-0-0	4
ME41616	Micro-scale fluid flow and heat transfer	3-0-0	3
ME40406	Turbo Machinery	3-0-0	3
ME60407	Finite Element Methods in Engineering	3-1-0	4
MEXXXX	Fluid Dynamics	3-1-0	4
ME60012	Computational Fluid Dynamics	3-1-0	4
	GROUP C		
ME3XXXX	<i>Thermofluids Laboratory</i>	0-0-3	2
ME2XXXX	<i>Mechatronics Laboratory</i>	0-0-3	2

Minor Requirement in Manufacturing Science and Engineering
for students of Mechanical Engineering

All the subjects from Group A, Three subjects from Group B, one Lab from Group C

Total Credit Requirement – Minimum 23

Number	Subject	L-T-P	CREDIT
	GROUP A		
ME60352	Robots	3-1-0	4
MF3XXXX	Non Traditional Manufacturing	3-1-0	4
MF3XXXX	Computer Integrated Manufacturing	3-1-0	4
	GROUP B		
ME60350	Metal Forming Processes	4-0-0	4
ME41601	Soft Computing	3-0-0	3
ME60137	Manufacturing Resource Planning	4-0-0	4
ME6XXXX	Additive Manufacturing	4-0-0	4
ME60215	Theory of Abrasive Machining	3-0-0	3
ME60302	Laser processing of Materials	4-0-0	4
ME60304	Product Development and CIM	4-0-0	4
ME60134	Numerical Modelling of Manufacturing Processes	4-0-0	4
ME41616	Micro-scale fluid flow and heat transfer	3-0-0	3
ME60114	Surface Engineering Material Technology	4-0-0	4
ME60306	Precision and Micro Manufacturing	3-0-0	3
	GROUP C		
	NTN Lab	0-0-3	2
	CIM Lab	0-0-3	2

**DEPARTMENT OF ELECTRONICS and ELECTRICAL
COMMUNICATION ENGINEERING**

**MINOR IN ELECTRONICS and ELECTRICAL COMMUNICATION
ENGINEERING**

Six Theory subjects and two laboratory subjects need be taken as listed:

COMPULSORY SUBJECTS (TOTAL THREE)

SL	Sub. No.	Subject Name	L-T-P	C	Prerequisite
1.	EC21207	Analog Electronic Circuits	3-1-0	4	
2.	EC21202	Digital Electronic Circuits	3-1-0	4	EC21207
3.	EC31203	Communication -I	3-1-0	4	

Note: EC21207 and EC21202 can be replaced by EE21205 (Analog Electronic Circuits) and EE21208 (Digital Electronic Circuits) for EE students. EC21202 can be replaced by CS21202 (Switching circuits and Logic Design) for CSE students.

COMPULSORY LABORATORY

1.	EC29207 OR EC29202	Analog Circuits Laboratory OR Digital Circuits Laboratory	0-0-3	2	
2.	EC39001	Analog Communications Laboratory	0-0-3	2	

Note: EC29207 or EC29202 can be replaced by EE29208 (Electronic Circuits Laboratory) for EE students or CS29204 (Switching Circuits Laboratory) for CSE students.

ELECTIVE SUBJECTS (ANY THREE)

SL	Sub. No.	Subject Name	L-T-P	C	Prerequisite
1.	EC21203	Network Theory	3-1-0	4	
2.	EC21205	Semiconductor Devices	3-1-0	4	
3.	EC21206	Electromagnetic Engg.	3-1-0	4	
4.	EC21208	Signals and Systems	3-1-0	4	
5.	EC21210	Systems and Control	3-1-0	4	EC21203
6.	EC31005	RF and Microwave Engg.	3-1-0	4	EC21206
7.	EC31201	Digital Signal Processing-1	3-1-0	4	EC21208