

**ELECTRONICS & COMMUNICATION  
ENGINEERING**

**Courses/Credit Distribution of Electronics & Communication Engineering Department**

**I. Basic Science Courses (BSC)**

<b>Semester I</b>					
<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
CHN 101	Applied Chemistry	3	0	2	4
<b>Semester II</b>					
<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
MAN 105	Vector Calculus, Fourier Series and Laplace Transform	3	1	0	4
PYN 106	Electromagnetic Field Theory	3	1/2	2/2	4

**II. Engineering Science Courses (ESC)**

<b>Semester II</b>					
<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
ESC 103	Introduction to Manufacturing	2	0	4	4
<b>Semester III</b>					
<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
ESC 206	Basics of Electrical Science	3	0	2	4
<b>Semester IV</b>					
ESC 202	Information Technology in Engineering	3	0	2	4

**III. Departmental Core Courses (DCC)**

<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
ECN101	Introduction To Electronics & Communication Engineering	2	0	0	2
ECN102	Analog Electronic Circuits – I	3	0	2	4
ECN103	Digital Design	3	0	2	4
ECN201	Communication Engineering	3	1	0	4
ECN202	Signals and Systems	3	1	0	4
ECN203	Microprocessor and Applications	3	0	2	4
ECN204	Analog Electronic Circuits – II	3	0	2	4
ECN 205	Technical Communication				2
ECN 206	Engineering Analysis and Design	3	0	2	4
ECN207	Computer Networks	3	1	0	4
ECN208	VLSI Design	3	0	2	4
ECN209	Digital Signal Processing	3	0	2	4
ECN210	Communication Theory	3	1	0	4
ECN301	Computer Architecture	3	1	0	4
ECN302	Advanced Communication	3	0	2	4
ECN303	Microwave and Radar	3	1/2	2/2	4
ECN304	Wireless Communication	3	0	2	4
ECN305	Embedded Systems	3	0	2	4

**IV. Departmental Elective Courses (DEC) – I  
Group – I (Any One)**

<b>Course code</b>	<b>Course name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
ECN 401	Control Systems	3	1	0	4
ECN 402	Digital Image Processing	3	1	0	4
ECN 403	Neural Networks and Fuzzy Systems	3	1	0	4
ECN 404	Electronic Measurements and Instrumentation	3	1	0	4

**Group – II (Any Two)****Discipline Specialization - I**

Course code	Course name	L	T	P	Credits
ECN 405	Antenna and Wave Propagation	3	1	0	4
ECN 406	Audio and Visual Systems	3	1	0	4
ECN 407	Telecommunication Systems	3	1	0	4
ECN 408	Optical Communication	3	1	0	4
ECN 409	Advanced Digital Communication	3	1	0	4
ECN 410	Satellite Communication	3	1	0	4

**Discipline Specialization - II**

Course code	Course name	L	T	P	Credits
ECN 411	HDL Based System Design	3	1	0	4
ECN 412	MEMS and Microsystems	3	1	0	4
ECN 413	Nano Technology	3	1	0	4
ECN 414	FPGA Based System Design	3	1	0	4
ECN 415	CMOS Analog VLSI Design	3	1	0	4
ECN 416	Foundations of VLSI CAD	3	1	0	4

**V. Departmental Honors Courses (DHC) (Tentative list)**

Course code	Course name	L	T	P	Credits
ECN 421	Advanced Microprocessor	3	1	0	4
ECN 422	Advanced Digital Signal Processing	3	1	0	4
ECN 423	Information Theory and Coding	3	1	0	4
ECN 424	Low Power VLSI Design	3	1	0	4
ECN 425	Probability and Random Processes	3	1	0	4

**VI. Minor Specialization Courses (MSC)**

Course code	Course name	L	T	P	Credits
ECN 431	Analog and Digital Electronics	3	1	0	4
ECN 202	Signal and Systems	3	1	0	4
ECN 209	Digital Signal Processing	3	1	0	4
ECN 432	Microprocessor and Microcontroller	3	1	0	4
ECN 433	Communication Systems	3	1	0	4

**VII. Open elective Courses (OEC)**

Course code	Course name	L	T	P	Credits
ECN461	Virtual Instrumentation	3	1	0	4
ECN403	Neural Networks and Fuzzy Systems	3	1	0	4
ECN462	Microcontrollers and their Applications	3	1	0	4
ECN402	Digital Image Processing	3	1	0	4
ECN 413	Nano Technology	3	1	0	4

**TEACHING SCHEME FOR B.E. ELECTRONICS & COMMUNICATION ENGINEERING  
DEPARTMENT**

**FIRST YEAR**

**Semester I**

Course code	Subject	Credits	Category
MAN101	Mathematics – I	4	BSC
ECN101	Introduction to Electronics & Communication Engineering	2	DCC
CSN104	Computer Programming (Basic/ Advanced)	4	ESC
CHN101	Applied Chemistry	4	BSC
HSS102/103	Communication Skills (Basics/ Advanced)	2	HSSC
	<b>Total</b>	<b>16</b>	

**Semester II**

Course code	Subject	Credits	Category
MAN105	Vector Calculus, Fourier Series and Laplace Transform / Mathematics – II	4	BSC
HSS101	Ethics and Self Awareness	2	HSSC
ESC103	Introduction to Manufacturing	4	ESC
ECN102	Analog Electronic Circuits – I	4	DCC
ECN103	Digital Design	4	DCC
GSN101	Environmental Sciences	4	GSC
	<b>Total</b>	<b>22</b>	

**SECOND YEAR**

**Semester I**

Course code	Subject	Credits	Category
PYN106	Electromagnetic Field Theory	4	BSC
ESC 206	Basics of Electrical Sciences	4	ESC
ECN 201	Communication Engineering	4	DCC
ECN 202	Signals and Systems	4	DCC
ECN 203	Microprocessor and Applications	4	DCC
ECN 204	Analog Electronic Circuits – II	4	DCC
	Economics	3	HSSMEC
	<b>Total</b>	<b>27</b>	

**Semester II**

Course code	Subject	Credits	Category
ECN206	Engineering Analysis and Design	4	DCC
ESC202	Information Technology in Engineering	4	ESC
ECN207	Computer Networks	4	DCC
ECN208	VLSI Design	4	DCC
ECN209	Digital Signal Processing	4	DCC
ECN210	Communication Theory	4	DCC
ECN221	Educational Tour	Non-credit	DCC
ECN205	Technical Communication	2	DCC
	<b>Total</b>	<b>26</b>	

### THIRD YEAR

#### Semester I

Course code	Subject	Credits	Category
ECN301	Computer Architecture	4	DCC
ECN302	Advanced Communication	4	DCC
ECN303	Microwave and Radar	4	DCC
ECN304	Wireless Communication	4	DCC
ECN305	Embedded Systems	4	DCC
ECN321	Minor Project	4	DCC
	<b>Total</b>	<b>24</b>	

#### Semester II

Course code	Subject	Credits	Category
ECN331	Internship*	20	DCC
	<b>Total</b>	<b>20</b>	

\*Internship Seminar presentations may be held a week before the date of Registration in Semester-I of Fourth Year

### FOURTH YEAR

#### Semester I

Course code	Subject	Credits	Category
	Open Elective	4	GSEC/MEC
	Departmental Elective Course – I	4	DEC
	Departmental Elective Course – II	4	DEC
ECN441	Major Project*	2*	DCC
	Minor Specialization Course – I Departmental Honours Course – I	4	MSC/DHC
	Minor Specialization Course – II Departmental Honours Course – II	4	MSC/DHC
	<b>Total</b>	<b>14/22</b>	

\*Evaluation needs to be carried out in next semester

#### Semester II

Course code	Subject	Credits	Category
	Business Environment and Business Laws	3	HSSMEC
	Departmental Elective Course – III	4	DEC
ECN451	Major Project	6	DCC
	Minor Specialization Course – III Departmental Honour Course – III	4	MSC/DHC
	Minor Specialization Course - IV Departmental Honour Course – IV	4	MSC/DHC
	Minor Specialization Course - V Departmental Honour Course – V	4	MSC/DHC
	<b>Total</b>	<b>13/25</b>	<b>DHC</b>

**COURSES OFFERED BY APPLIED SCIENCE DEPARTMENT TO ALL DEPARTMENTS**

**I. Departmental Elective courses (DEC)**

**Group-I**

Course code	Course name	L	T	P	Credits
CHN 401	Modern Instrumental Methods Of Chemical Analysis	3	1	0	4
PYN 401	Advanced Physics	3	1	0	4
PYN 402	Crystal Physics	3	1	0	4
PYN 403	Solid State Physics	3	1	0	4
MAN 401	Operation Research	3	1	0	4
MAN 402	Optimization Techniques	3	1	0	4

**II. Minor Specialization Courses For 7<sup>th</sup> Semester**

Course Code	Course Name	L	T	P	Credits
<b>Humanities Section</b>					
HSM 401	Principles of Management	2	2	0	4
HSM 402	Business Environment and Business Laws	2	2	0	4
HSM 431	Managing Innovation and Change	2	2	0	4
<b>Chemistry Section</b>					
CHN 431	Inorganic Chemistry	3	0	3	4
CHN 432	Organic Chemistry	3	0	3	4
<b>Physics Section</b>					
PYN 431	Quantum Mechanics	3	1	0	4
PYN 432	Statistical Physics	3	1	0	4
<b>Mathematics Section</b>					
MAN 431	Algebra	3	1	0	4
MAN 432	Number Theory	3	1	0	4

**Minor Specialization Courses For 8<sup>th</sup> Semester**

Course Code	Course Name	L	T	P	Credits
<b>Humanities Section</b>					
HSM 404	Financial Management	2	2	0	4
HSM 405	Marketing Management	2	2	0	4
HSM 406	Human Resource Management	2	2	0	4
HSM 432	Business Research	2	2	0	4
<b>Chemistry Section</b>					
CHN 433	Physical Chemistry / Analytical Chemistry	3	1	0	4
CHN 434	Environmental Chemistry	3	1	0	4
CHN 435	Recent Advances in Chemical Sciences	3	1	0	4
<b>Physics Section</b>					
PYN 433	Nuclear Physics	3	1	0	4
PYN 434	Experimental Nuclear Physics	3	1	0	4
PYN 435	X-Ray Crystallography	3	1	0	4
<b>Mathematics Section</b>					
MAN 433	Fourier Series and Integral Transforms	3	1	0	4
MAN 434	Calculus of Variations	3	1	0	4
MAN 435	Algebraic Coding Theory	3	1	0	4