

**GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA**  
**Department of Electronics and Communication Engineering**  
 Syllabus Scheme for B. Tech. Batch 2018 onwards (Electronics and Communication Engineering)

<b>Semester-3<sup>rd</sup></b>											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Marks Distribution		Total Marks	Credits
					L	T	P	Internal	External		
1	Basic Science Course	BSEC-101	Engineering Mathematics - III	Theory	3	0	0	40	60	100	3
2	Professional Core Course	PCEC-101	Electronic Devices	Theory	3	0	0	40	60	100	3
3	Professional Core Course	PCEC-102	Network Analysis and Synthesis	Theory	3	1	0	40	60	100	4
4	Professional Core Course	PCEC-103	Signals and Systems	Theory	3	1	0	40	60	100	4
5	Professional Core Course	PCEC-104	Digital Electronics	Theory	3	1	0	40	60	100	4
6	Professional Core Course	PCEC-105	Computer Architecture	Theory	3	0	0	40	60	100	3
7	Mandatory Course <sup>\$</sup> (Non-Credit)	MCI-101	Environmental Science	Theory	2	0	0	50	0	50	S/US
8	Professional Core Course	LPCEC-101	Electronic Devices Laboratory	Practical	0	0	2	30	20	50	1
9	Professional Core Course	LPCEC-102	Digital Electronics Laboratory	Practical	0	0	2	30	20	50	1
10	Training	TR-101	Training - I	Practical	-	-	-	60	40	100	1
11	Mandatory Course	-	Mentoring and Professional Development	Practical	0	0	1	-	-	-	-
<b>TOTAL</b>					<b>20</b>	<b>3</b>	<b>5</b>	<b>360</b>	<b>440</b>	<b>800</b>	<b>24</b>

**Contact Hours      28**

\* Industrial/ Institutional Training of 4-weeks shall be held in summer vacation after 2nd semester and marks/credit shall be awarded in 3<sup>rd</sup> semester itself.

\$ Marks of non credit courses are excluded from total and minimum 40% score is required to achieve satisfactory level.

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<b>Semester-4<sup>th</sup></b>											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Marks Distribution		Total Marks	Credits
					L	T	P	Internal	External		
1	Professional Core Course	PCEC-106	Analog Circuits	Theory	3	1	0	40	60	100	4
2	Professional Core Course	PCEC-107	Object Oriented Programming using C++ and Data Structures	Theory	3	0	0	40	60	100	3
3	Professional Core Course	PCEC-108	Electromagnetic Field Theory	Theory	3	0	0	40	60	100	3
4	Professional Core Course	PCEC-109	Linear Control Systems	Theory	3	1	0	40	60	100	4
5	Humanities and Social Sciences including Management Course	HSMEC-101	Information Management and Data Analytics	Theory	3	0	0	40	60	100	3
6	Professional Core Course	LPCEC-103	Analog Circuits Laboratory	Practical	0	0	2	30	20	50	1
7	Professional Core Course	LPCEC-104	Measurement and Control Laboratory	Practical	0	0	2	30	20	50	1
8	Professional Core Course	LPCEC-105	Object Oriented Programming using C++ and Data Structures Laboratory	Practical	0	0	2	30	20	50	1
9	Professional Core Course	LPCEC-106	Intelligent Signal Processing Laboratory	Practical	0	0	2	30	20	50	1
10	Seminar	PREC-101	Seminar and Technical Report Writing for Engineers	Practical	0	0	2	50	0	50	1
11	Mandatory Course	MPD-102	Mentoring and Professional Development	Practical	0	0	1	100	-	100	1
<b>TOTAL</b>					<b>15</b>	<b>2</b>	<b>11</b>	<b>470</b>	<b>380</b>	<b>850</b>	<b>23</b>

**Contact Hours 28**

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<b>Semester-5<sup>th</sup></b>											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Marks Distribution		Total Marks	Credits
					L	T	P	Internal	External		
1	Professional Core Course	PCEC-110	Analog Communication Systems	Theory	3	0	0	40	60	100	3
2	Professional Core Course	PCEC-111	Digital Signal Processing	Theory	3	1	0	40	60	100	4
3	Professional Core Course	PCEC-112	Microprocessors and Microcontrollers	Theory	3	1	0	40	60	100	4
4	Professional Core Course	PCEC-113	Antenna and Wave Propagation	Theory	3	0	0	40	60	100	3
5	Professional Core Course	PCEC-114	Computer Networks	Theory	3	0	0	40	60	100	3
6	Mandatory Course\$ (Non-credit)	MCI-102	Constitution of India	Theory	2	0	0	50	0	50	S/US
7	Professional Core Course	LPCEC-107	Analog Communication Systems Laboratory	Practical	0	0	2	30	20	50	1
8	Professional Core Course	LPCEC-108	Digital Signal Processing Laboratory	Practical	0	0	2	30	20	50	1
9	Professional Core Course	LPCEC-109	Microprocessors and Microcontrollers Laboratory	Practical	0	0	2	30	20	50	1
10	Professional Core Course	LPCEC-110	Computer Networks Laboratory	Practical	0	0	2	30	20	50	1
11	Training	TR-102	Training-II	Practical	-	-	-	60	40	100	1
12	Mandatory Course	-	Mentoring and Professional Development	Practical	0	0	1	-	-	-	0
<b>TOTAL</b>					<b>17</b>	<b>2</b>	<b>9</b>	<b>380</b>	<b>420</b>	<b>800</b>	<b>22</b>

**Contact Hours 28**

\* Industrial/ Institutional Training of 4-weeks shall be held in summer vacation after 4<sup>th</sup> semester and marks/credit shall be awarded in 5<sup>th</sup> semester itself.

\$ Marks of non-credit courses are excluded from total and minimum 40% score is required to achieve satisfactory level.

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<b>Semester-6<sup>th</sup></b>											
S. No.	Course Type	Course Code	Course Title	Subject Type	Hours per week			Marks Distribution		Total Marks	Credits
					L	T	P	Internal	External		
1	Professional Core Course	PCEC-115	Digital Communication Systems	Theory	3	0	0	40	60	100	3
2	Professional Core Course	PCEC-116	Microwave and Radar	Theory	3	0	0	40	60	100	3
3	Professional Core Course	LPCEC-111	Digital Communication Systems Laboratory	Practical	0	0	2	30	20	50	1
4	Professional Core Course	LPCEC-112	Microwave and Radar Laboratory	Practical	0	0	2	30	20	50	1
5	Professional Elective Course	PEEC-XXX	Elective - I	Theory	3	1	0	40	60	100	4
6	Professional Elective Course	PEEC-XXX	Elective - II	Theory	3	1	0	40	60	100	4
7	Open Subject	OEZZ-XXX	Open Elective - I	Theory	3	0	0	40	60	100	3
8	Professional Elective Course #	LPPEEC-XXX	Elective-I Laboratory	Practical	0	0	2	30	20	50	1
9	Project	PREC-102	Minor Project	Practical	0	0	2	30	20	50	1
10	Mandatory Course	MPD-103	Mentoring and Professional Development	Practical	0	0	1	100	-	100	1
<b>TOTAL</b>					<b>15</b>	<b>2</b>	<b>9</b>	<b>420</b>	<b>380</b>	<b>800</b>	<b>22</b>

**Contact Hours** 26

# Students will be offered the corresponding Labs from Elective - I laboratory as per their allotted subject in Elective - I.

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**List of Program Electives**

Course Type	Course Code	Course Title
Elective - I	PEEC-101	Optical Communication
	PEEC-102	ARM based Embedded System
Elective - II	PEEC-103	Mobile Communication and Networks
	PEEC-104	Multimedia Signal Processing
Elective - III	PEEC-105	VLSI Design
	PEEC-106	Soft Computing
Elective - IV	PEEC-107	CMOS Design
	PEEC-108	Biomedical Signal Processing

**List of Program Elective Laboratory**

Course Type	Course Code	Course Title
Elective - I Laboratory	LPEEC-101	Optical Communication Laboratory
	LPEEC-102	ARM based Embedded System Laboratory
Elective - III Laboratory	LPEEC-103	VLSI Design Laboratory
	LPEEC-104	Soft Computing Laboratory

**List of Open Elective Subjects offered to all other departments**

Course Type	Course Code	Course Title
Open Elective - I	OEEC-101	Signals and Systems
	OEEC-102	Basics of Electronics and Communication
Open Elective - II	OEEC-103	Embedded Systems
	OEEC-104	Wireless Communication