

Electrical Engineering Department, School of Engineering

UG Prospectus for 2013 entry batch

Department of Electrical Engineering, School of Engineering at Shiv Nadar University offers B.Tech programs in, Electrical Engineering and Electronics and Communication Engineering. The B.Tech programs at SNU prepare students with a broad foundation in fundamental principles of Mathematics, Science, and Engineering, and the ability to apply this knowledge to the design, analysis, and implementation of real-life complex systems.

The flexibility of SNU's curriculum allows students to customize their programs to meet their own interests. Students combine core math, science, and engineering with electives in the arts, humanities, social sciences, and business.

Students build on this foundation throughout their program of study by engaging in experiential learning in order to gain a hands-on experience in applying classroom concepts in the real world. A final year project provides the students the opportunity to work in multi-disciplinary teams to pursue an engineering idea from conception to design. Strong partnerships with industry and funded research provide great opportunities for undergraduate student research and internships, and other experiential learning programs provide opportunities for students to gain relevant real world experience during their program of study. SNU engineering graduates are trained to understand the broad social, economic, and ethical implications of their work, and to be cognizant of their professional responsibilities. The innovative curriculum offers exceptional preparation for an engineering career, as well as for many other professions.

Structure of UG program

Total number of Credits: 177

No. of Years: Four

Degrees offered: B.Tech in Electrical engineering

B.Tech in Electronics and Communication Engineering

Curriculum

S. No.	Category	Credits
1.	Core Common Curriculum (CCC)	24
2.	University Wide Elective (UWE)	18
3.	Basic Sciences (BS)	28
4.	Engineering Sciences (ES)	20
5.	Major Core	55
6.	Major Elective	12
7.	Project	20
Total Credits		177

For details of CCC, UWE refer UG Handbook

Basic Sciences**28 Credits**

S. No.	Course	L:T:P	Credits
1	Physics-1	3-1-0	4
2	Applied Chemistry	3-1-1	5
3	Maths-1	3-1-0	4
4	Bio Science	3-0-0	3
5	Maths-2	3-1-0	4
6	Physics-2	3-1-1	5
7	Maths-3	3-0-0	3
	Total Credits		28

Engineering Sciences**20 Credits**

S. No.	Course	L:T:P	Credits
1	Problem Solving through Programming	3-0-1	4
2	Introduction to Electrical Engineering	3-1-1	5
3	Engineering Mechanics	3-1-0	4
4	Manufacturing Processes	1-0-1	2
5	Engineering Graphics	1-0-1	2
6	Material Science and Engineering	3-0-0	3
	Total Credits		20

Project**20 Credits**

S. No.		L:T:P	Credits
1	Project	0-0-20	20

B.Tech in Electronics and Communication

First Semester

S. No.	Course Title	L:T:P	Credits
1	CCC 1		3
2	Maths-1	3:1:0	4
3	Physics-1	3:1:0	4
4	Applied Chemistry	3:1:1	5
5	Engineering Mechanics/ Engineering Graphics	3:1:0/1:0:1	4/2
6	Problem Solving through Programming/ Introduction to Electrical Engineering	3:0:1/3:1:1	4/5
7	Manufacturing Processes	1:0:1	2
Semester Credits			24/ 25

Second Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 2		3
2	Maths-2	3:1:0	4
3	Physics-2	3:1:1	5
4	Bioscience	3:0:0	3
5	Engineering Mechanics/ Engineering Graphics	3:1:0/ 1:0:1	4/2
6	Problem Solving through Programming/ Introduction to Electrical Engineering	3:0:1/3:1:1	4/5
7	Manufacturing Processes	1:0:1	2
Semester Credits			24/23

*Students will do either the combination of Engineering Mechanics & Problem Solving through Programming OR Engineering Graphics, Introduction to Electrical Engineering & Manufacturing Processes.

Third Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 3		3
2	UWE - 1		3
3	Maths-3	3-0-0	3
4	Material Science and Engineering	3-0-0	3
5	Circuit Theory	3-1-0	4
6	Signals and Systems	3-1-0	4
7	Data Structures	3-0-1	4
Semester Credits			24

Fourth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 4		3
2	UWE-2		3
3	Digital Electronics	3-1-1	5
4	Electro mechanics	3-0-1	4
5	Analog Electronic Circuits	3-0-1	4
6	Communication Engineering	3-0-1	4
Semester Credits			23

Fifth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 5		3
2	UWE-3		3
3	Electromagnetic Engineering	3-0-1	4
4	Control Systems	3-1-1	5
5	Microprocessors and Microcontrollers	3-0-1	4
6	Major Elective-1		3
Semester Credits			22

Sixth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 6		3
2	UWE-4		3
3	UWE-5		3
4	Communication Networks	3-0-1	4
5	Digital Signal processing	3-1-1	5
6	Major Elective-2		3
Semester Credits			21

Seventh Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 7		3
2	CCC 8		3
3	Major Elective-3		3
4	Major Elective-4		3
5	UWE-6		3
6	VLSI Technology and Design	3-0-1	4
7	Summer Internship		
Semester Credits			19

Eighth Semester

S. No.	Course Title	L:T: P	Credits
1	Project	0-0-20	20
Semester Credits			20

Tentative list of Major electives (Specialization Tracks)

If a student takes all the courses from one of the tracks as Major Electives then he/she gets a specialization in that area

Track 1 : Microelectronics

S. No.	Course Title	L:T: P	Credits
1	Semiconductor Devices	3-0-0	3
2	Digital System Design	3-0-1	4
3	Design of Analog ICs I	3-0-0	3
4	Design of Analog ICs II	3-0-0	3
Total Credits			13

Track 2: Wireless Communication

S. No.	Course Title	L:T: P	Credits
1	Digital Communication	3-0-0	3
2	Wireless and Mobile Communication	3-0-0	3
3	Information and Coding Theory	3-0-0	3
4	Optical Communication OR Satellite Communication	3-0-0	3
Total Credits			12

Track 3 : Signal Processing & Computation

S. No.	Course Title	L:T: P	Credits
1	Introduction to Artificial Neural Networks and Fuzzy Logic, Sets and System	3-0-0	3
2	Introduction to Digital Signal Processing Methods	3-0-0	3
3	Introduction to Computer Vision & Image Processing	3-0-0	3
4	Introduction to Digital Video Processing	3-0-0	3
5	Applied Signal Processing and Computation	2-0-1	3
Total Credits			15

B.Tech in Electrical Engineering

First Semester

S. No.	Course Title	L:T:P	Credits
1	CCC 1		3
2	Maths-1	3:1:0	4
3	Physics-1	3:1:0	4
4	Applied Chemistry	3:1:1	5
5	Engineering Mechanics/Engineering Graphics	3:1:0/1:0:1	4/2
6	Problem Solving through Programming/ Introduction to Electrical Engineering	3:0:1/3:1:1	4/5
7	Manufacturing Processes	1:0:1	2
Semester Credits			24/ 25

Second Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 2		3
2	Maths-2	3:1:0	4
3	Physics-2	3:1:1	5
4	Bioscience	3:0:0	3
5	Engineering Mechanics/ Engineering Graphics	3:1:0/ 1:0:1	4/2
6	Problem Solving through Programming/ Introduction to Electrical Engineering	3:0:1/3:1:1	4/5
7	Manufacturing Processes	1:0:1	2
Semester Credits			24/23

*Students will do either the combination of Engineering Mechanics & Problem Solving through Programming OR Engineering Graphics, Introduction to Electrical Engineering & Manufacturing Processes.

Third Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 3		3
2	UWE - 1		3
3	Maths-3	3-0-0	3
4	Material Science and Engineering	3-0-0	3
5	Circuit Theory	3-1-0	4
6	Signals and Systems	3-1-0	4
7	Data Structures	3-0-1	4
Semester Credits			24

Fourth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 4		3
2	UWE-2		3
3	Digital Electronics	3-1-1	5
4	Electro mechanics	3-0-1	4
5	Analog Electronic Circuits	3-0-1	4
6	Communication Engineering	3-0-1	4
Semester Credits			23

Fifth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 5		3
2	UWE-3		3
3	Electromagnetic Engineering	3-0-1	4
4	Control Systems	3-1-1	5
5	Microprocessors and Microcontrollers	3-0-1	4
6	Major Elective-1		3
Semester Credits			22

Sixth Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 6		3
2	UWE-4		3
3	UWE-5		3
4	Power Electronics	3-0-1	4
5	Power Engineering	3-1-1	5
6	Major Elective-2		3
Semester Credits			21

Seventh Semester

S. No.	Course Title	L:T: P	Credits
1	CCC 7		3
2	CCC 8		3
3	Major Elective-3		3
4	Major Elective-4		3
5	UWE-6		3
6	Electric Drives	3-0-1	4
7	Summer Internship		
Semester Credits			19

Eighth Semester

S. No.	Course Title	L:T: P	Credits
1	Project	0-0-20	20
Semester Credits			20

Tentative list of Major Electives for EE (Specialization Tracks)

If a student takes all the courses from one of the tracks as Major Electives then he/she gets a specialization in that area

Track 1 : High Voltage Engineering

S. No.	Course Title	L:T: P	Credits
1	Transmission and Distribution	3-0-0	3
2	Power System Analysis	3-0-0	3
3	High Voltage Systems	3-0-0	3
4	Protection and Switch Gear	3-0-0	3
Total Credits			12

Track 2 : Instrumentation and Control Engineering

S. No.	Course Title	L:T: P	Credits
1	Measurements and Instrumentation	3-0-0	3
2	Supervisory Control and Data Acquisition Systems	3-1-0	4
3	Process Instrumentation and Control	3-1-1	5
Total Credits			12

Minor for Non Engineers offered by Electrical Engineering Department

Pre Requisite: Physics and Mathematics at +2 level OR Equivalent and higher Maths and Physics course at SNU

Seats 5 in each EE and ECE

Entry into the Minor will be decided by Interaction/Interview with UG Advisor/Departmental committee

Minor in Electrical Engineering (EE)

S. No.	Course Code	Course Title	L:T: P	Credits
1	EED 101	Introduction to Electrical Engineering	3-1-1	5
2	EED 202	Digital Electronics	3-1-1	5
3	EED 203	Electro mechanics	3-0-1	4
4	EED 204	Analog Electronic Circuits	3-0-1	4
5	EED 304	Power Electronics	3-0-1	4
Total credits				22

Minor in Electronics and Communication Engineering (ECE)

S. No.	Course Code	Course Title	L:T: P	Credits
1	EED 101	Introduction to Electrical Engineering	3-1-1	5
2	EED 202	Digital Electronics	3-1-1	5
3	EED 201	Signals and Systems	3-1-0	4
4	EED 204	Analog Electronic Circuits	3-0-1	4
5	EED 206	Communication Engineering	3-0-1	4
Total credits				22