

## 12. SCHOOL OF ENGINEERING

The School of Engineering was established in 2018. The school offers a five year dual degree program with B. Tech in engineering discipline (4 years) combined with a master's program, M. Tech/M.S. (1 year), with specialisation in Social science/Management/Humanities/Science/ Technology and a Ph.D. program in Computer Science & Engineering, Electronics & Communication Engineering and Mechanical Engineering.

The five year dual degree is one of the very few programmes in the country where the student would acquire skills in technology and its application to aid the sustainable development of the society. In the dual degree program, the students will acquire the necessary foundational skills through the designed core/elective/optional courses in the areas of technology, basic science, humanities, social science. This will build the basic competencies to pursue a master's degree from amongst a spectrum of options available, subsequently.

The dual degree program is novel in the sense that it extends an opportunity to the students, especially in their fourth and fifth year of the program to involve themselves in projects/dissertations and courses in humanities, international studies, sciences, languages, linguistics and social science. Not only will this allow an acquaintance with the frontier areas, it will make the students more sensitive towards their socio-economic and environmental responsibilities. The programme would emphasize further that generating returns for society and the larger community is indispensable. With such an engaging and holistic learning approach, students will have the opportunity to become better problem solvers.

The School aspires to be at the forefront in offering interdisciplinary research - a goal in JNU's charter. Our notable faculty covers various facets of modern computer engineering, electronics and communication engineering and mechanical engineering. The Ph.D. program will be an exploration in the above mentioned disciplines.

### Programmes of Study

#### 1. Five years dual degree programme (B.Tech. + M. Tech/M.S.)

##### Admission eligibility:

- (a) Students will be admitted after 10+2 schooling on the basis of JEE Main ranking through CSAB/ JoSAA.
- (b) 15% supernumerary seats for foreign nationals at the entry level of the dual degree (B. Tech + M. Tech/M.S.) programme as per DASA Scheme of MHRD

##### Program Structure:

- (a) B. Tech in Computer Science and engineering and M.S/M. Tech in Social Sciences/ Humanities/ Science/ Technology (4 year + 1 year)
- (b) B. Tech in Electronics and Communication Engineering and M.S/M. Tech in Social Sciences/ Humanities/ Science/ Technology (4 year + 1 year)

##### List of available M. Tech specialisations\*:

- (a) Computer Science and Engineering
- (b) VLSI (Very large scale integration)
- (c) RF and Microwave

##### List of M.S specialisations\*:

- (a) Computational Biology
- (b) Computational Finance
- (c) Computational Linguistics
- (d) Environment Science
- (e) Economics
- (f) International Studies
- (g) Korean Studies
- (h) Management
- (i) Management and Entrepreneurship

**Subject to availability of seats and faculty**

#### 2. Doctor of Philosophy (Ph.D.) program

##### (a) Ph.D. in Computer Science and Engineering (CSE)

Research Areas: Computer Vision, Computer Networks, Cyber Security, Data Science, Artificial Intelligence, Social Networks.

##### (b) Ph. D. in Electronics and Communication Engineering (ECE)

Research Area: Microwave, RF, Electro-magnetic, Signal Processing, Time Series, Analysis, Network Science, Meta Materials.

##### (c) Ph.D. in Mechanical Engineering

**Research Areas:** Welding Technology, Metallic foams, Metal Machining, Material Science.

##### Mode of Admission:

Through JRF/GATE mode. Admission through GATE will be against fellowship availability in the School of Engineering.

**Credit Requirements:****1. Dual degree programme (B. Tech + M. Tech/M.S.)**

The minimum credit requirement for the dual degree programme would be 183 credits. The duration of the program is 10 semesters. Broadly, it consists of approximately 6 semesters of undergraduate engineering curriculum followed by approximately 2 semesters of postgraduate curriculum and lastly, 2 semesters of dissertation.

The curriculum for the M. Tech component will either be a continuation of the undergraduate engineering discipline or one from the pool of M.S specializations. There will be a compulsory dissertation (concerned specialization) in the last two semesters. The students can do additional credits through open choice of courses, which will allow them to develop broad inter-disciplinary knowledge base and opportunity to do their M.S/M. Tech in discipline other than B. Tech.

**\*\*There will be no exit option available for getting a degree before 5 years**

**2. Doctor of Philosophy (Ph.D.) program**

A student in the Ph.D. program has to earn a minimum of 18 credits along with two non-credit courses within first year of their Ph.D. Program in order to be eligible to continue in the Ph.D. program.

**Hostel Accommodation:**

The outstation candidates, admitted to the programmes of study of the university, will be considered for hostel accommodation as per rules of the university subject to availability of hostel accommodation. Grant of admission in the university would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to availability. No candidate shall be eligible to register himself/herself for a full-time programme of study if he/she is already registered for any full-time programme of study in this university or any other university/institution.

For more details about the School, visit the JNU website : <https://www.jnu.ac.in/se>

**ELIGIBILITY:****B.Tech. + MTech/M.S.**

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Engineering	B.Tech. in Computer Science and Engineering and MTech/M.S. in Social Sciences/ Humanities/ Science/ Technology – CSEE (1001)  B.Tech in Electronics and Communication Engineering and MTech/M.S. in Social Sciences/ Humanities/ Science/ Technology – ECEE (1002)	As per eligibility mentioned for JEE Main

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Code Number	Eligibility
1	School of Engineering	Computer Science and Engineering – CSEH (912)  Electronics and Communication Engineering – ECEH (913)  Mechanical Engineering – MEEH (918)	Only those candidates shall be considered for admission to the Ph.D. Programme who have  Master's degree in the areas related to Electronics, Electrical, Computer Science, Information Technology, with at least 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).  OR  Obtained M.Tech./M.E. degree in the area related to Electronics, Electrical, Computer Science, Information Technology, Software Engineering, Materials Engineering, Mechanical Engineering, Aerospace Engineering, Industrial Engineering, Manufacturing/ Production Engineering with at least 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed) from a recognised university/institute.  Relaxation to SC/ST/OBC (Non creamy layer)/PWD as per the UGC Regulations 2016.