

Bachelor of Science in Electrical & Electronic Engineering (BSc in EEE) at North South University (NSU)

Overview

The **Bachelor of Science in Electrical & Electronic Engineering (BSc in EEE)** at **North South University (NSU)** is a comprehensive and interdisciplinary program designed to provide students with a strong foundation in electrical and electronic principles, modern engineering practices, and cutting-edge technologies. The curriculum balances theoretical knowledge with practical application, preparing graduates for careers in industry, research, and academia.

Program Structure & Curriculum

The **BSc in EEE** program follows a structured curriculum that includes fundamental engineering courses, advanced electives, and hands-on laboratory experience. The curriculum is designed to meet international standards and equip students with both technical and analytical skills.

Core Courses:

- Circuit Analysis
- Electronics I & II
- Digital Logic Design
- Signals & Systems
- Electrical Machines
- Control Systems
- Power Systems
- Communication Engineering
- Microprocessors & Microcontrollers
- Electromagnetic Fields & Waves
- Renewable Energy Systems

Mathematics & Science Courses:

- Engineering Mathematics (Calculus, Linear Algebra, Differential Equations)
- Probability & Statistics

- Physics for Engineers
- Chemistry

Specialized Electives:

Students can tailor their studies by selecting from various elective courses, including:

- Advanced Power Electronics
- Smart Grid Technologies
- Digital Signal Processing
- Wireless Communication & Networks
- Internet of Things (IoT) for Embedded Systems
- Semiconductor Devices & VLSI Design
- Artificial Intelligence in Electrical Engineering

Capstone Project & Internship:

The program requires students to complete a final-year capstone project, where they work on innovative solutions to real-world engineering problems. Additionally, students undergo internships with leading electrical, electronics, and telecommunication companies to gain industry exposure.

Faculty & Research

The **EEE Department** at NSU comprises experienced faculty members with PhDs from reputed international universities. Faculty members are engaged in cutting-edge research across various domains, including:

- Power & Renewable Energy Systems
- Embedded & IoT Systems
- Wireless Communications & 5G Technologies
- Nanoelectronics & Semiconductor Technologies
- Control Systems & Robotics

Laboratories & Facilities

NSU provides state-of-the-art laboratories to enhance hands-on learning and research, including:

- **Electronics & Circuit Lab** for circuit design and testing.
- **Power & Energy Lab** for experiments in electrical machines and renewable energy.
- **Communication Systems Lab** for wireless and optical communication research.
- **Control & Robotics Lab** for automation and control engineering projects.
- **Microprocessor & Embedded Systems Lab** for IoT and hardware-based projects.

Industry Collaboration & Career Prospects

The **BSc in EEE** program maintains strong collaborations with top engineering firms, research institutions, and government agencies. Graduates from this program have pursued successful careers at companies such as:

- Siemens
- General Electric (GE)
- Samsung
- Huawei
- Local and international power and telecommunication companies

Career opportunities for graduates include:

- Electrical Engineer
- Power Systems Engineer
- Telecommunications Engineer
- Embedded Systems Developer
- Control & Automation Engineer
- Renewable Energy Specialist

Extracurricular Activities & Competitions

Students are encouraged to participate in technical competitions, research symposiums, and engineering societies. NSU students regularly engage in:

- IEEE Student Branch activities
- Robotics Competitions
- Hackathons & Innovation Challenges
- Renewable Energy and Smart Grid Competitions

Conclusion

The **Bachelor of Science in Electrical & Electronic Engineering (BSc in EEE)** at **North South University (NSU)** is a top-tier program designed to produce highly skilled engineers. With a well-rounded curriculum, strong research focus, industry collaborations, and modern facilities, the program prepares students to excel in the ever-evolving field of electrical and electronic engineering.