EEE Lab Resources:

The EEE Department offers a richly equipped laboratory with a hands-on approach to enable students to verify and reinforce various concepts taught and discussed in different theoretical courses and to help students gain significant practical experience in the areas of electrical and electronic engineering. In order to provide hands-on education along with intensive theoretical knowledge, the Department of EEE provides the following key laboratory facilities for the degree program:

Electrical Machines and Transformers Lab:

- Synchronous Machine
- Induction Motors
- DC Machine
- Transformer

Power System Lab:

- Power System Transmission and Distribution
- Power Electronics
- Power System Protection Relays

Electrical and Electronic Lab:

- Analog Signal Generators
- Analog and Digital Multimeters
- Function Generators
- RF Signal Generator
- Analog Oscilloscopes
- Digital Storage Oscilloscopes
- LCR Meters
- Power Supply
- Trainer Boards

Analog and Digital Communication Lab:

- AM, FM, PM Modulators and Demodulators
- TDM, FDM Trainer
- AM, FM Transmitter and Receiver Systems
- TV Receiver
- Digital Communication Trainer
- Mobile Phone Trainer
- Sound Level Meters

Optical Communication Lab:

- Fiber Optic Communication Trainer
- Optical Trainer Board
- Light Intensity Generator
- Lux Meter

Microwaves Engineering Lab:

- Microwave Training System
- Cavity Resonator
- Reflex Klystron
- Gunn Diode Oscillator
- Microwave Detector
- Directional Couplers
- Slide Screw Tuner
- Slotted Line Wave Guide
- Microwave Attenuators
- Magic Tee
- Horn Antenna

Control Engineering Lab:

- Microcontroller Based Control System
- Programmable Logic Controller
- Altera FPGA D-1 Board
- DSP Development Trainer

Microprocessor and Microcomputer Lab:

- 8086 Based Microprocessor Trainers
- PIC16F877A based Microcontroller board

Computer Lab: Agilent ADS, MATLAB, ModelSim, VHDL, PSpice, Quartus, HFSS, COMSOL Multiphysics, PSIM

Faculty Information

The EEE department has excellent faculty members who hold both Ph.D. and M.Sc. degrees obtained from around the world. There are Professors, Assistant Professors, Senior Lecturers, and Lectures in the department. While the department boasts of its extremely promising junior teachers, the number of senior professors in the department is significantly and satisfactorily high. Both the faculty members and students have easy access to a range of electronic journals, including IEEE, Science Direct, and Springer. Also, the ULAB Library subscribes to a rich variety of e-books relevant to all areas of science and engineering, which both students and faculty members can easily access.

Job Fields

- Power Company
- Telecommunication Sector
- Electrical & Electronics Industry
- IT Sector including Banking
- Software Engineering
- Microcontrollers and Embedded Systems
- Biomedical Engineering
- Industrial Automation
- TV Broadcasting Center
- Satellite Communications Engineering
- Radar Engineering
- Research Organizations
- Renewable Energy Sector

Associated Organization : ULAB IEEE Student Branch

ULAB
UNIVERSITY OF LIBERAL ARTS BANGLADESH

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ULAB EEE Brochure/June/2016/V1

Department of Electrical and Electronic Engineering

EEE

ULAB
UNIVERSITY OF LIBERAL ARTS BANGLADESH

B Sc. Degree in Electrical and Electronic Engineering

The Bachelor of Science (B Sc.) program in Electrical & Electronic Engineering (EEE) is designed to produce competent professionals with excellent skills and knowledge in the fields of electrical & electronic engineering. Graduates in this program are fully trained and prepared to be proficient enough to compete anywhere in the world.

This program offers a rich variety of electrical and electronic courses, while providing solid foundations in Mathematics and Physics. It also offers a wide range of general education courses from English and Business, to relevant interdisciplinary engineering courses, including Liberal Arts and Social Science courses. This program focuses on providing excellent theoretical and practical education in the modern development of EEE. Students of this program are also provided with a variety of opportunities to develop and enhance their abilities to analyze and solve complex problems and to design new and multiple uses of engineering and technology in order to serve today's rapidly growing and challenging demands of different and diverse communities and societies at both home and abroad.

Graduation Requirements:

Types of Courses	No. of Courses
EEE Core Courses	17
Physics	2
Math and Stat	5
EEE Concentration (Major Group)	4
EEE Optional (Minor Group)	5
Thesis / Project / Internship	1
GED / Interdisciplinary Engineering	7
English	3
Total	**44**

EEE Major Core Courses:

Course Code	Course Title
EEE 101	Electrical Circuit I
EEE 102	Electrical Circuit I Laboratory
EEE 103	Electrical Circuit II
EEE 104	Electrical Circuit II Laboratory
PHY 101	Waves & Oscillations, Modern Physics & Optics
PHY 102	Physics Laboratory
PHY 103	Electricity, Magnetism & Engineering, Electromagnetism
EEE 201	Electronic Devices and Circuits I
EEE 202	Electronic Circuit Simulation Laboratory (PSPICE)
EEE 203	Electronic Devices and Circuits II
EEE 204	Electronic Devices and Circuits Laboratory
EEE 205	Electrical Machines I (Transformer, Induction I Motor, etc.)
EEE 206	Electrical Machines Laboratory
EEE 207	Structured Programming
EEE 208	Structured Programming Laboratory
EEE 209	Electrical Machines II (Generator, Synchronous Motor, etc.)
EEE 211	Electronic Measurement & Instrumentation
EEE 212	Electronic Measurement and Instrumentations Laboratory
EEE 301	Digital Electronics
EEE 302	Digital Electronics Laboratory
EEE 303	Digital Signal Processing
EEE 305	Electromagnetic Fields and Waves
EEE 306	Electrical Service Design (Wiring, Air - Conditioning and Security System) Special Laboratory
EEE 307	Power System I
EEE 308	Power System I Laboratory
EEE 309	Telecommunication Engineering
EEE 310	Telecommunication Engineering Laboratory
EEE 311	Electrical Properties of Materials
EEE 313	Microprocessor and Microcomputer Interfacing
EEE 314	Digital Signal Processing Laboratory
EEE 401	Solid State Device
EEE 403	Control System I
EEE 404	Control System I Laboratory
EEE 400	Thesis / Project / Internship

Mathematics and Statistics (Core):

Course Code	Course Title
MAT 101	Math-I (Differential & Integral Calculus)
MAT 102	Math-II(Coordinate Geometry and Linear Algebra)
MAT 201	Math-III (Differential equations and Numerical Analysis)
MAT 203	Math-IV (Complex Variables and Mathematical Methods)
STA 206	Statistics and Probability

EEE Concentrations (Major Groups)

Elective courses are classified into four specialized groups (concentrations)

1. Electronic 2. Communication and Signal Processing
3. Power and 4. Computer

Every student is required to take 4 (four) elective courses from any one out of the above 4 (four) major groups. Among them, however, at least 2 (two) courses should be taken along with their labs. Otherwise, a student is required to take 4 (four) elective courses from any 2 (two) groups out of the above 4 (four) major groups. Among them, at least 1 (one) course should be taken along with its lab from each of the two selected groups.

I. Electronics Group

Sl. No	Course Code	Course Title
1	EEE 421	Analog Integrated Circuits
2	EEE 423	Processing & Fabrication Technology
3	EEE 425	VLSI I
4	EEE 426	VLSI I Laboratory
5	EEE 427	VLSI II
6	EEE 428	VLSI II Laboratory
7	EEE 429	Compound Semiconductor and Hetero - Junction Devices
8	EEE 430	Optoelectronics
9	EEE 431	Biomedical Instrumentation
10	EEE 432	Biomedical Instrumentation Laboratory
11	EEE 433	Power Electronics
12	EEE 434	Power Electronics Laboratory
13	EEE 435	Semiconductor Physics

II. Communication and Signal Processing Group

Sl. No	Course Code	Course Title
1	EEE 441	Random Signals & Process
2	EEE 443	Information and Coding Theory
3	EEE 445	Microwave Engineering
4	EEE 446	Microwave Engineering Laboratory
5	EEE 447	Digital Communication
6	EEE 448	Digital Communication Laboratory
7	EEE 449	Optical Fiber Communication
8	EEE 451	Wireless and Cellular Communication
9	EEE 453	Radar and Satellite Communication

III. Power Group

Sl. No	Course Code	Course Title
1	EEE 461	Power System II
2	EEE 463	Energy Conversion
3	EEE 465	Power Plant Engineering
4	EEE 467	Power System Protection
5	EEE 468	Power System Protection Laboratory
6	EEE 469	Power System Reliability
7	EEE 470	Power System Operation and Control
8	EEE 471	High Voltage Engineering
9	EEE 472	High Voltage Engineering Laboratory
12	EEE 473	Control System II
13	EEE 474	Control System II Laboratory
14	EEE 475	Renewable Energy Systems

IV. Computer Group

Sl. No	Course Code	Course Title
1	EEE 481	Microprocessor System Design
2	EEE 482	Microprocessor System Design Laboratory
3	EEE 483	Computer Networks
4	EEE 484	Computer Networks Laboratory
5	EEE 485	Numerical Methods
6	EEE 486	Numerical Methods Laboratory
7	EEE 487	Computer Architecture
8	EEE 489	Real Time Computer System
9	EEE 491	Multimedia Communication