

Department of Electronics & Communication Engineering
School of Technology
North Eastern Hill University, Shillong-793022
B.Tech in ECE Lateral Entry Entrance Examination (LEEE) 2021

F.No.7.16/ECE/B.Tech Lateral Entry/2021

Date: 21.09.2021

The admission/selection to 2nd year/3rd semester B.Tech (ECE) program for a limited number of seats will be based only on the **online written examination** (Please refer to the detailed syllabus) of **one hour duration (total marks 50)**.

Eligibility of appearing LEEE'2021: Diploma course in engineering/Technology in the disciplines of ECE/Electrical/Instrumentation/Medical Electronics/ Information Technology/Computer Science and Engineering (CSE), having secured a minimum of 60% (55% in case of SC/ST/Differently-abled candidates) marks in aggregate from any recognized institution through a minimum of 3(three) years of institutional study after successfully completing Class 10/equivalent Examination from recognized Board/institution.

OR

B.Sc./B.Sc.(Hons.) in Electronics/Mathematics/Physics with Mathematics at 10+2 level having secured a minimum of 60% (55% in case of SC/ST/Differently-abled candidates) marks in aggregate from any recognized institution.

Merit list shall be prepared as per NEHU rules and based on the performance in LEEE 2021. The decision of the admission committee in all matters shall be binding and final. Date, time and venue of the written test are as follows:

Date of Online Written Examination	24th September 2021(Friday)
Time of Online Written Examination	10 A.M – 11 A.M (1 hour)

The applicants are informed to check their e-mail regularly for any kind of update.

Sd/-
Chairman
B.Tech (ECE) Lateral Entry Admission Committee

Syllabus for B.Tech ECE Lateral Entry Entrance Examination 2021
Department of Electronics and Communication Engineering,
North-Eastern Hill University, Shillong-22

(Total Marks: 50)

Electronics Devices and Circuits: Classification of materials into conductor, semiconductor, insulator etc, electrical properties, magnetic materials, various types of relays, switches and connectors. Conventional representation of electric & electronics circuits elements. Active and passive components; semiconductor Physics; Semiconductor Diode; Bipolar transistor & their circuits; Transistor Biasing stabilization of operating point; Single stage transistor amplifier; field effect transistor, MOSFET circuits application. Multistage Transistor Amplifier; Transistor Audio Power Amplifier; feedback in Amplifier; Sinusoidal; Oscillators; Tuned Voltage Amplifier; Opto-Electronics Devices and their applications; Operational Amplifier, Wave shaping and switching circuits. Block diagram of IC Timer (such as 555) and its working; Multivibrator Circuits; Time Base Circuits; Thyristor, and regulated power supply [8]

Digital Electronics : Applications and advantages of digital system; number system (binary and hexadecimal); Logic Gates; Logic Simplification; Codes and Parity; Arithmetic Circuits; Decoders, Display Devices and Associated Circuits, Multiplexers and De- multiplexers; Latches and Flip Flops; Counters; Shift Registers; Memories A/D and D/A converters. [8]

Communication: Principles of AM Modulation, demodulation and its various types. FM and PM modulator/demodulator, pulse modulation. Introduction to Microwave Devices [8]

Network, Filters and Transmission Lines: Two port network; Attenuators; Filters; Transmission Lines and their applications, characteristic impedance of line; concept of refraction and standing waves on a transmission line; Transmission line equations; principles of impedance matching, Bandwidth consideration of a transmission line. [8]

Instruments and Measurements: Specification of instruments- accuracy, precision, sensitivity, resolution range, errors in measurements and loading effect; principles of voltage, current and resistance measurements; Transducers, measurement of displacement & strain forces & torque measuring devices, pressure measuring devices flow measuring devices, power control devices & circuits. Types of AC milli voltmeters. Block diagram, explanation of a basic CRO and a triggered sweep oscilloscope, front panel controls; impedance bridges and Q- Meters. Principles of working and specifications of logic probes, signal analyzer and logic analyzer, signal generator, distortion factor meter, spectrum analyzer. [6]

Control System: Basic elements of control system, open and closed loop system, concept of feedback, Block diagram of control system, Time lag, hysteresis, linearity concepts, Transfer function of simple control components, single feedback configuration. Time response of systems. Stability Analysis Characteristics equation, Routh Hurwitz criteria. Nyquist criterion, Relative stability, phase margin and gain margin, root locus techniques. [6]

Microprocessors (8085): Typical organization of a microprocessor system & functions of its various blocks; Architecture of a Microprocessors; Memories and I/O Interfacing, Addressing Modes; concept of Instruction set; programming exercises in assembly language; concept of interrupt, Data transfer techniques, DMA, serial output data, serial input data [6]