

**Department of Electronics & Communication Engineering
School of Technology
North Eastern Hill University, Shillong-793022**

B.Tech in ECE Lateral Entry Entrance Examination (LEEE) 2017

F.No.7.16/ECE/B.Tech Lateral Entry/2017

Date: 22.06.2017

The admission/selection to 2nd year/3rd semester B.Tech (ECE) program for a limited number of seats will be based only on the written test (Please refer to the detailed syllabus) of **two hours duration (total marks 100)**. Merit list shall be prepared as per NEHU rules and based on the performance in LEEE'2017. 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 written Test	14th July 2017 (Friday)
Time of written Test	2 P.M. – 4 P.M. (2 hours)
Venue	Department of Electronics and Communication Engineering School of Technology, NEHU, Shillong- 793022.
Reporting Time	1.15 P.M (at the venue)

In case, any candidate fails to report at the reporting time and venue on the specified date and time mentioned above, he/she will forfeit his/her claim to appear for entrance test.

➤ **Important Dates:**

Publication for candidate's name shortlisted for B.Tech (ECE) Lateral Entry Entrance Examination 2017 in NEHU website	On or before 30 th June, 2017.
B.Tech (ECE) Lateral Entry Entrance Examination 2017	14 th July 2017
Publication of Merit List and Waiting List in NEHU website and departmental notice board	On or before 18 th July 2017
Date of Admission	3 rd August 2017
Display of vacant seats (if any)	4 th August 2017
Start of B.Tech (ECE) Classes	7 th August 2017
Admission of Waitlisted candidates (if any)	8 th August 2017

Notes: The above mentioned dates are tentative.

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

Detailed Syllabus along with the marks distribution for Lateral Entry
Entrance Exam-2017 B.Tech (ECE)

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 UT Regulated Power Supply. [16]

Digital Techniques: 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. [16]

Communication: Modulation and de-modulation – and principles and operation of various type of AM, FM and PM modulator/demodulator pulse modulation. Introduction to Microwave Devices. [16]

Network, Filters and Transmission Lines: Two port network; Attenuators; Filters; Transmission Lines and their applications characteristic impedance of line; concept of reflection and standing waves on a transmission line; Transmission line equation; principles of impedance matching, Bandwidth consideration of a transmission line. [16]

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 – Amplifier rectifier and rectifier amplifier. 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, signature analyzer and logic analyzer, signal generator, distortion factor meter, spectrum analyzer. [12]

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's table, Nyquist criterion, Relative stability, phase margin and gain margin. Routh Hurwitz criteria, root locus techniques [12]

Microprocessors: Typical organization of a microprocessor system & functions of its various blocks; Architecture of a Microprocessors; Memories and I/O Interfacing, Addressing Mode; concept of Instruction set; programming exercises in assembly language; concept of interrupt Data transfer techniques, DMA, serial output data, serial input data. [12]