Department of Electronics & Communication Engineering
School of Technology
North Eastern Hill University, Shillong-793022
B.Tech in ECE Lateral Entry Entrance Examination (LEEE) 2020

F. 7.16/ECE/Lateral Entry Admission/20-21/573 Date: 01.09.2020

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 test** (Please refer to the detailed syllabus) of **one hour duration** (**total marks 50**).

Eligibility of appearing LEEE'2020: 3-year Diploma in Engineering from disciplines ECE/Electrical/Instrumentation/Medical Electronics/ Information Technology/CSE with minimum three years of institutional study after class 10/SSLC securing a minimum of 60% marks in aggregate, from any recognized institution OR B.Sc. in Electronics/Mathematics/Physics having secured a minimum of 60% marks in aggregate from any recognized institution having Mathematics at 10 + 2 level.
Merit list shall be prepared as per NEHU rules and based on the performance in LEEE 2020. The decision of the admission committee in all matters shall be binding and final. Date and time of the online test are as follows:

Date of online test	**14th September 2020 (Monday)**
Time of online test	**11 A.M. – 12 Noon (1 hour)**

Important Dates:

Publication for candidate's name shortlisted for B.Tech (ECE) Lateral Entry Entrance Examination 2020 in NEHU website	07.09.2020
B.Tech (ECE) Lateral Entry Entrance Examination 2020	14.09.2020
Publication of Merit List and Waiting List in NEHU website and Departmental notice board	15.09.2020
Date of Provisional Admission	16.09.2020 to 18.09.2020
Display of vacant seats (if any)	21.09.2020
Admission of Waitlisted candidates (if any)	22.09.2020

Notes:

1. ***The above mentioned dates are tentative. In case of any changes of the dates, same will be notified in the NEHU website.***
2. *In case, any candidate fails to report at the reporting time on the specified date and time mentioned above, he/she will forfeit his/her candidature. Furthermore, if selected, the candidate has to take admission within the given time frame (will be announced later) or else his/her claim against the seat will be invalidated. The decision of the Admission Committee in all matters shall be binding and final.*

3. ***<u>All qualifying candidates will be provisionally admitted.</u>***

4. *Qualifying candidates need to provide an undertaking mentioning that he/she will forfeit the claim against his/her candidature if not satisfying the desired criteria supported by all original testimonies.*

5. *The qualifying candidates decided to take admission will have to pay their fees between the 16th to 18th September, 2020 failing which their admission will stand cancelled.*

6. *Physical verification of the original Mark sheets, Certificates, Testimonies etc. will be done after re-opening of the department with regular normal classes.* ***<u>If any qualifying candidates is found to be not fulfilling the desired criteria, his/her admission will stand cancelled and the admission fees will be returned to the concerned student after deducting the processing fees as per the rule of University.</u>***

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

Department of Electronics and Communication Engineering,

North-Eastern Hill University, Shillong-22

Detailed Syllabus along with the marks distribution

(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 is 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]