

Course Outline: 3rd Year 1st Semester B.Sc. Engg. 2025
Dept. of Computer Science and Engineering, University of Dhaka
CSE-3103: Microprocessor and Microcontroller, 3.0 Credits

Course Teacher: Prof. Sazzad M.S. Imran, PhD; Dept. of EEE, DU
url- sazzadmsi.webnode.com

Syllabus:

Evolution of microprocessor.

8086 microprocessor: architecture, instruction sets, interrupts and 8259A, higher versions of 8086 (80286, 80386, 80486).

Pentium microprocessor: architecture, register sets, cache, floating point operations, addressing modes, paging, instruction set, opcode, interrupt, protected mode operations.

Next generation microprocessors: Intel core architecture, Intel dual core, core 2 duo, core 2 quad, core i3, core i5, core i7, mobile microprocessors, ARM, helio, atom.

Microcontrollers: Microcontroller & embedded systems, 8051 microcontroller architecture, operation and instruction set, memory and I/O interfacing, interfacing to external devices.

Programmable Logic Controller (PLC): Basic structures, I/O, programming, mnemonics and timers, relays and counters, master and jump control, data control, analog I/O control.

Reference Books:

- (1) Intel Microprocessor: Architecture, Programming and Interfacing, Barry B. Brey.
- (2) ARM System-on-Chip Architecture; Steve Furber.
- (3) The 8051 Microcontroller A Systems Approach; Mazidi & McKinlay.
- (4) Programmable Logic Controllers; Frank D. Petruzella.

Class Hour:

Sunday: 08.30am ~ 10.030am

Wednesday: 08.30am ~ 10.00am

Place:

Room #429, Dept. of CSE, DU

Incourse Exam:

Only one compulsory incourse exam will be taken.

Date and time of the exam will be announced by the department.

5 short answer type questions will be given from any consecutive 6 lectures.

Students have to answer all 5 questions in 1 hour (marks- $5 \times 5 = 25$).

No optional/additional incourse exam will be taken under any circumstances except declared by the department or university.

Notices:

All important notices, answers and result of incourse exam etc. will be available on website- sazzadmsi.webnode.com/eee-dept-du/ in a timely manner.

Marks Distribution:

(1) Attendance/Assignment: 5

(2) Incourse: 25

(3) Final: 70 (answer any 5 out of 7; $5 \times 14 = 70$; 3 hours)

N.B.: Other than course teacher another external examiner will independently set 7 questions for the final exam on his/her own choice but following the syllabus. Exam committee will finally select any 7 questions from the 14 questions (course teacher- 7, external- 7).