

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Northern Technological University
2. University Department/Centre	Electronics and Control Department
3. Course title/code	Computer architecture
4. Programme(s) to which it contributes	Electronics and Control Department
5. Modes of Attendance offered	In class face-to-face mode / online mode
6. Semester/Year	1 st -2 nd semester
7. Number of hours tuition (total)	4 hrs per week/ 120 hrs total
8. Date of production/revision of this specification	2021
9. Aims of the Course	
Provide the student with information on the microprocessor to knuckle machine language and Assembly issues. And link the microprocessor with memory and external and internal devices	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

- A- Knowledge and Understanding
 - A1. Basic Concepts of microprocessor
 - A2.
 - A3.
 - A4.
 - A5.
 - A6 .

B. Subject-specific skills
B1. Programming written in low level language
B2. Interfacing microprocessor with outside world
B3.

Teaching and Learning Methods

- 1- Lectures.
- 2- Tutorials.
- 3- Homework and Assignments.
- 4- Tests and Exams.
- 5- In-Class Questions and Discussions.

Assessment methods

- 1- Quizzes: 10%
- 2- 1st term exam: 10%
- 3- 2nd term exam: 10%
- 4- Lab exam 30%
- 5- Final exam: 40%

C. Thinking Skills

- C1.
- C2.
- C3.
- C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1.
- D2.
- D3.
- D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4		General architecture of computer	Lectures and lab	Quiz/Exam
2	4		General architecture of A microcomputer		Quiz/Exam
3	4		Data types,Types of Microprocessors,Number Systems	Lectures and lab	Quiz/Exam
4	4		Computer languages Machine language, Assembly language,high- level language		Quiz/Exam
5	4		Overview of 8085 microprocessor main features, programmable registers,	Lectures and lab	Quiz/Exam
6	4		Accumulator, general –purpose registers, Flags, Program Counter, Stack Pointer	Lectures and lab	Quiz/Exam
7	4		8086 microprocessor Features of 8086 microprocessor	Lectures and lab	Quiz/Exam
8	4		Architecture of 8086 microprocessor Bus Interface Unit [BIU],Execution Unit [EU]	Lectures and lab	Quiz/Exam
9	4		Register Organization, General Purpose Registers, Segment Registers	Lectures and lab	Quiz/Exam
10	4		Pointers and Index Registers, Flag Register, Bus Operation	Lectures and lab	Quiz/Exam
11	4		Memory Segmentation, Generation of 20-bit Address	Lectures and lab	Quiz/Exam
12	4		8086 instruction set and Assembly language program	Lectures and lab	Quiz/Exam
13	4		Addressing modes	Lectures and lab	Quiz/Exam

14	4		8086 INSTRUCTION	Lectures and lab	Quiz/Exam
15	4		Data transfer instructions	Lectures and lab	Quiz/Exam
16	4		Arithmetic instructions	Lectures and lab	Quiz/Exam
17	4		Logic instructions	Lectures and lab	Quiz/Exam
18	4		Shift instructions	Lectures and lab	Quiz/Exam
19	4		Flag-control instructions	Lectures and lab	Quiz/Exam
20	4		compare instruction	Lectures and lab	Quiz/Exam
21	4		control flow and jump instructions	Lectures and lab	Quiz/Exam
22	4		subroutines instruction	Lectures and lab	Quiz/Exam
23	4		loops instructions	Lectures and lab	Quiz/Exam
24	4		String instructions	Lectures and lab	Quiz/Exam
25	4		8086 micro processing unit Minimum – mode and maximum- mode system	Lectures and lab	Quiz/Exam
26	4		Minimum – mode interface signal	Lectures and lab	Quiz/Exam
27	4		Maximum – mode interface signal	Lectures and lab	Quiz/Exam
28	4		System clock	Lectures and lab	Quiz/Exam
29	4		Bus cycle and time status	Lectures and lab	Quiz/Exam
30	4		Memory interface circuits	Lectures and lab	Quiz/Exam
31	4		Types of input/output	Lectures and lab	Quiz/Exam
32	4		Input/output data transfers, instruction	Lectures and lab	Quiz/Exam

12. Infrastructure

<p>Required reading:</p> <ul style="list-style-type: none"> · CORE TEXTS · COURSE MATERIALS · OTHER 	<p>The 8088 and 8086 microprocessors programming, interfacing, software, hardware, and applications</p> <p style="text-align: right;">Walter A. Triebel, Avtar Singh</p>
<p>Special requirements (include for example workshops, periodicals, IT software, websites)</p>	<p>None</p>

Community-based facilities (include for example, guest Lectures , internship , field studies)	None
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13. Admissions	
Pre-requisites	According to ministry requirements
Minimum number of students	10
Maximum number of students	50