



FAST

الذى علم بالقلم- علم الانسان ما لم يعلم-

National University of Computer and Emerging Sciences

Department of Computer Science & Software Engineering

Computer Organization and Assembly Language - Lab

EL2003 - Computer Organization and Assembly Language - Lab



Engr. Khuram Shahzad

(Instructor)

MS Data Science(In-progress)

BS Software Engineer, MUST AJK

Ex-Software developer, MA Business Hub Ltd

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Course OBJECTIVES

The main objective of this course is to introduce the organization of computer systems and usage of assembly language for optimization and control. Emphasis is given to expose the low-level logic employed for problem solving while using assembly language as a tool. At the end of the course the students should be able to: Identify the major components of computer architecture, and explain their purposes and interactions. Simulate the internal representation of data, and show how data is stored and accessed in memory. Explain the relationships between hardware architecture and its instruction set, and simulate micro-programs. Explain the Instruction Execution Cycle. Explain the differences and relationships among high-level, assembly, and machine languages. Write well-modularized computer programs in an assembly language, implementing decision, repetition, and procedure structures.



Software's & Tools will be used in Lab



MS Word

For documentation



NASM

The Netwide Assembler is an assembler and disassembler for the Intel x86 architecture. It can be used to write 16-bit, 32-bit and 64-bit programs.



DOSBox

DOSBox is a free and open-source emulator which runs software for MS-DOS compatible disk operating systems—primarily video games



Assembly language

We will practically write code in assembly Language



Advance free Debugger

The debugger automatically displays the contents of memory locations and registers as they are accessed and displays the address of the program counter.

This display makes assembly debugging a valuable tool that you can use together with source debugging

Course Outcomes

After the successful completion of course, the students will be able to:

- ☐ Translate C/C++ code into assembly language.
- ☐ Perform simple optimizations by hand.
- ☐ Trace and debug at the assembly level.
- ☐ Understand and extend simple CPU implementations.
- ☐ Understand basic interrupt/exception handling.
- ☐ Make simple performance estimates for assembly code.



Tools we will use for conducting class/Lab



Gmail

Send and Receive Emails



Google Class Room

Class group, Assignments, Quiz , Papers, Notes and Books etc.

Google Classroom



Google Meet

Video conferencing app, class will be on google meet if campus going to close due to

Google Meet pandemic



Attendance , Marks, Grades/CGPA and challans etc.



Evaluations(No finalized)

Eval Type ▼

+ Add to List

Sr#	Evaluation Name	Weightage	Range
1	Assignment	10	Range: 0 to 40
2	Final Exam	40	Range: 0 to 100
3	Home Work	15	-
4	Lab Work	25	Range: 0 to 60
5	Quiz	10	Range: 0 to 40

For any query, feel free to contact

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THANKS 😊

