

University of Technology
Computer Engineering Department
Academic Year 2023 - 2024
Second Year – First Semester - All Branches



CE232	Computer Architecture I	2 Hours/Week	2 Units
--------------	--------------------------------	---------------------	----------------

Contents of Syllabus	Hours
<ul style="list-style-type: none"> • Register Transfer & Computer Organization: Data movement around registers. Data movement from/to memory, arithmetic and logic micro operations. Concept of bus and timing in register transfer. 	4
<ul style="list-style-type: none"> • Basic Computer Organization: Computer Instructions, Timing and Control, Execution of Instructions, Design of Basic Computer. 	6
<ul style="list-style-type: none"> • Microprogrammed Control Unit: Basic organization of microprogrammed control unit, Microinstruction formats, Address sequencer. 	6
<ul style="list-style-type: none"> • CPU Organization: Addressing Modes, Instruction Format. CPU organization with large registers, stacks and handling of interrupts & subroutines. 	6
<ul style="list-style-type: none"> • Arithmetic Processor Design: Addition subtraction for signed unsigned numbers and 2's complement numbers, Array multiplier, Booth's algorithm, Array divider. 	4
<ul style="list-style-type: none"> • Pipelining: Parallel Processing, Principle of pipelining, Instruction and arithmetic pipelines, Hazards of pipelining. 	6

References

1. Morris Mano, "computer System architecture", 3rd Edition, Prentice Hall.
2. Mostara Abd-El-Barr, Hesham El-Rewini, "Fundamentals of Computer Organization and Architecture", John Wiley, 2005.
3. David A. Patterson, John L. Hennessy, "Computer Organization and Design", Arm Edition, Elsevier, 2010.

اسم التدريسي: د.حسن اوحيد جواد