University of Technology

Computer Engineering Department

Academic Year 2023 - 2024

Second Year – Second Semester - All Branches

CE237	Computer Architecture II	2 Hours/Week	2 Units

Contents of Syllabus	Hours
• Vector Processing: Principles of vector processing, vector operation, Matrix multiplication, Memory interleaving, Supercomputers.	4
• Memory Organization: Concept of RAM/ROM, basic cell of RAM, Associative memory, Cache memory organization, Virtual memory organization.	10
• I/O Organization: Introduction to Peripherals & their interfacing. Strobe based and handshake-based communication, DMA based data transfer, I/O processor.	8
• Parallel Processing: Characteristics of Multiple Processors, Interconnection structure and arbitration, Interprocess communication and synchronization.	6
• Multi-core Computers: Hardware and software performance, Multi-core organization.	2

References

1. Morrise 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.

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