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نموذج (هـ)
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Summarized Course Description

Course number: ECE 462	Course name: Computer Systems Architecture
لغة تدريس المقرر: English	Pre-requisites: ECE 343
Credit hours: 4 (3-2-0)	Course level: Level - 8 or 9

Course Description   : وصف المقرر

Computer system organization and design, implementation of CPU datapath and control, instruction set design, memory hierarchy (caches, main memory, virtual memory) organization and management, input/output subsystems (bus structures, interrupts, DMA), performance evaluation, pipelined processors.

Course objectives   : أهداف المقرر

1. Study of the evolution of computer architecture and the factors influencing the design of hardware and software elements of computer systems
2. Understanding Structure and Function of Digital Computer at 3 Levels: Assembly/machine language level: instruction set, System architecture level: subsystems & connections and digital logic level: gates, memory elements, buses.

Course Outcomes   مخرجات التعليم:

Upon completing the course, the student should be able to:

1. Demonstrate the fundamentals of hardware and software technologies that underlie contemporary computer-based information systems
2. Establish strong knowledge about underlying structure and theories of computers and programming.
3. Develop algorithms for programming solutions and write simple programs.
4. Identify the basic elements of hardware and explain their functions and how they fit together to form an architecture.
5. Explain how data is represented, manipulated and stored within a computer system.
6. Identify and explain the functions of operating systems.
7. Explain how computers interact through local and wide area networks.
8. Identify various different types of programming languages.
9. Explain common data types and structures.

Textbook and references   الكتاب المقرر والمراجع المساندة:

Textbook: Hennessy, J. L., and D. A. Patterson. Computer Architecture: A Quantitative Approach, 3rd ed. San Mateo, CA: Morgan Kaufman, 2002. ISBN: 1558605967.
References:
Hennessy, J. L., and D. A. Patterson. Computer Architecture: A Quantitative Approach, 2nd ed. San Mateo, CA: Morgan Kaufman, 1995. ISBN: 1558603727.
Patterson, D. A., and J. L. Hennessy. Computer Organization and Design: The Hardware/Software Interface, 3rd ed. San Mateo, CA: Morgan Kaufman, 2004. ISBN: 1558606041.