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| Lab. | Th. | units | First Semester  2017 - 2018 | Duration | University of Mustansiriyah  Department of Computer Science  Stage : 2nd class  Instructor : Dr. Narjis Mezaal Shati +  Dr. Alaa Abdulhussein Altaay |
| 2 | 3 | 4 | 15 weeks |
| **Computer Organization** | | | | | **Class name** |

**Prerequisite Course (s):** knowledge about computer and it's parts**.**

**Points distributions:** 40% (26% theoretical (2 exams, assignments), 14% practical (2 exams)), 60% final exams.

**Course description:** This course includes knowledge about stages of computer development, parts of computer (hardware), data representation.

**Aims:** explain the computer parts (hardware)

**Objective(s):** At the end of the course, students are expected to learn:

* History and computer classification,
* Van Newman computer
* Parts of computer (hardware)
* Storage unite ( internal and external)
* Data representation

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| **Week** | **Description** | |
| **Theoretical** | **practical** |
| Week 1 | **Introduction to computer system**   * Hardware * Software * Users * Data |  |
| Week 2 | **History of computer and computer classification**   * History Of Computer (first, second , third, fourth and fifth generation) * Computer Classifications (process data, purpose and size). |  |
| Week 3 | **Van Newman computer architecture**   * CPU * Input * Output * Working storage * Permanent storage |  |
| Week 4 | **Data Representation (bit , byte)**   * numbers * Characters * Integer ( signed , 1's complement and 2's complement) |  |
| Week 5 | **Data representation**   * fixed-point * floating-point |  |
| Week 6 | First test |  |
| Week 7 | **Input device**   * Card Reader * Scanner * Light Pen * Microphone * Keyboard * Mouse * Joystick * Digital Camera * Touch Screen |  |
| Week 8 | **Output device**   * Printer * Monitor * Speaker |  |
| Week 9 | **External storage**   * Sequential Access Media * Random Access Media |  |
| Week 10 | **Primary storage**   * RAM * ROM |  |
| Week 11 | Cache memory and Registers   * Type of Cache memory * Type of Registers |  |
| Week 12 | **Central Processing Unit CPU**   * CPU operations * The part of CPU |  |
| Week 13 | Second test |  |
| Week 14 | **Busses** |  |
| Week 15 | **Networks and Data Communications** |  |

**Textbook(s):**

1. Using Information Technology ( A practical Introduction to computers & communication )

(2011 by The McGraw-Hill Companies, Inc.)

**Other References:**

1. The essential guide to IC3 ( 2006 CCI Learning Solutions Inc. )
2. Fundamentals of Computer Organization and Architecture. (2005 by John Wiley & Sons, Inc.)
3. Computing Fundamentals ( Fifth Edition ) ( 2003 by peter Norton )