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|  | Hashemite University |  |
| | Prince Al-Hussein bin Abdullah II Faculty for Information Technology | |
| | Department of Computer Science and its Applications | |

Course Syllabus

Year: 2018-2019

Semester: (2)

| Course No. | Course Title | Designation | Prerequisite | Co-requisite | Credit Hours Lectures /Lab. |
|------------|----------------------|-------------|--------------|--------------|--------------------------------|
| 1510011123 | Digital Logic Design | Required | 110101152 | - | 3 / 0 |

| Instructor Name | E-mail | Office No. | Office ext. | Office Hours |
|--------------------|--|------------|-------------|--------------------------|
| Dr. Sari Awwad | sari@hu.edu.jo | 124 | - | All days (10-11) |
| Dr. Ahmad Qawasmeh | AhmadR@hu.edu.jo | 236 | - | Sun, Tue, Thu (10-11) |

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| Coordinator's Name: | Dr. Sari Awwad |
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| Course Description | This course the following topics are introduced. Digital and numbering systems: conversion methods, binary and complement arithmetic; Boolean algebra; Circuit minimization techniques; Combinational circuits: Adders, Decoders, Encoders, Code Converters; Sequential Circuits: flip-flops, counters, registers, synchronous sequential circuits. |
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| a) Textbook (s): |
| 1. Morris Mano and Michael D. Ciletti, Digital Design, 5th Edition, Prentice Hall, 2013., ISBN-10: 0-273-76452-7; ISBN-13: 978-0-273-76452-6 |
| b) Additional References: |
| 1. Digital Logic Design, Fourth Edition by Brian Holdsworth and Clive Woods , 2002. |
| 2. Fundamentals of Logic Design by Charles H and Roth, Jr. West Publishing Company |

| Course Learning and Outcomes CLOs | |
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| 1. Recognize the numbering systems and digital logic circuits. (2 ABET) | |
| 2. Analyze a logic circuit, and identify and define its inputs/outputs (1 ABET) | |
| 3. Analyze and design logic networks using both traditional techniques (such as K-maps and state tables) and modern CAD tools. (2 ABET) | |
| 4. Design, implement, and evaluate a digital circuit (2 ABET) | |
| Addressed Student Learning Outcomes (SLOs) | |
| 1 and 2(ABET) | |

| Topic Details | Course ILO number | Reference | No. of Weeks | Contact hours* |
|-------------------------------------|--------------------------|------------------|---------------------|-----------------------|
| 1. Digital and Numbering Systems: | 1 | Ch1 | 2 | 6 |
| 2. Boolean Algebra and Logic gates: | 2 | Ch2 | 3 | 9 |
| 3. Gate-Level Minimization | 2 | Ch3 | 2 | 6 |
| 4. Combinational Logic | 3 | Ch4 | 3 | 9 |
| 5. Synchronous Sequential Logic | 4 | Ch5 | 3 | 9 |
| 6. Registers and Counters | 4 | Ch6 | 2 | 6 |
| Total | | | 15 | 45 |

| Assessment method | Grade | Comments |
|--------------------------|--------------|----------------------|
| First Exam | 30% | Covers Chapters 1, 2 |
| Second Exam | 30% | Covers Chapters 3, 4 |
| Final Exam | 40% | Covers all topics |
| Total | 100% | |