**Course description form**

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| 1. Course name: Digital Electronics II | | | | | | | | |
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| 1. Course Code: WBM-42-06 | | | | | | | | |
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| 1. Semester/year: 2nd/2024 | | | | | | | | |
|  | | | | | | | | |
| 1. Date this description was prepared: 3/20/2024 | | | | | | | | |
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| 1. Available attendance forms: Weekly attendance - theoretical hall + practical laboratory | | | | | | | | |
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| 1. Number of study hours (total)/number of units (total):75hours/semester (2Theoretical hours per week + 3 practical hours) / 3 units | | | | | | | | |
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| 1. Name of the course administrator (if more than one name is mentioned) | | | | | | | | |
| the name: Asst. Lecturer Harith Nawfal Abdali Mohsen Al-Musawi  Email: harith.na@uowa.edu.iq | | | | | | | | |
| 1. Course objectives | | | | | | | | |
| * Learn the basics of logic circuits * Building sequential logic circuits. * Construct functional tables for all slippers and latches. * The process of converting between different swings. * Build different types of counters, synchronous and asynchronous. | | | | **Objectives of the study subject** | | | | |
| 1. Teaching and learning strategies | | | | | | | | |
| 1-The methodical book, as well as lectures and solving mathematical problems.  2-Scientific library.  3- Visual presentation methods (data show) using the PowerPoint program or displaying PDF files to clarify the lecture items, drawings and shapes.  4-Useful educational sites on the Internet.  5The teacher delivers detailed theoretical lectures, and students participate during the lecture in solving some engineering problems.  6- Adopting the homework method to solve the exercises by students. | | | | | | Teaching and learning strategy | | |
| 1. Course structure | | | | | | | | |
| **Evaluation method** | **Learning method** | **Required learning outcomes** | | | **Name of the unit or topic** | | **hours** | **the week** |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | Latchs and flip flops, SR FF | | 2 theoretical + 3 practical | 1 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | D FF, JK FF, and T FF, applications | | 2 theoretical + 3 practical | 2 |
| a  Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | counters, asynchronous counter (eipple counters) up-down counters | | 2 theoretical + 3 practical | 3 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | synchronous counters design, up-down) | | 2 theoretical + 3 practical | 4 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | counters mod-counters, applications | | 2 theoretical + 3 practical | 5 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | , registers, shift register, serial in/serial out, serial in/parallel out, parallel in/parallel out, parallel in /serial out | | 2 theoretical + 3 practical | 6 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | ring counter | | 2 theoretical + 3 practical | 7 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | johanson counters, applications | | 2 theoretical + 3 practical | 8 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | square wave generators | | 2 theoretical + 3 practical | 9 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | Shift register | | 2 theoretical + 3 practical | 10 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | Multiviberator  one shot | | 2 theoretical + 3 practical | 11 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | A/D and D/A | | 2 theoretical + 3 practical | 12 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | memory types, RAM | | 2 theoretical + 3 practical | 13 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | ROM, flash RAM. | | 2 theoretical + 3 practical | 14 |
| Surprise exams and classroom activities | LecturesDATA SHOW | The student understands the topic | | | Application of digital electronics | | 2 theoretical + 3 practical | 15 |
| 1. Course evaluation | | | | | | | | |
| Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.   * Attendance + cup = 10% * Monthly exam = 30% * Practical laboratory = 10% * Final exam = 50% * Final total = 100% | | | | | | | | |
| 1. Learning and teaching resources | | | | | | | | |
| 1- Required prescribed books | | | “Digital Design”, FIFTH EDITION, M. Morris Mano & Michael D. Ciletti, 2013, Pearson Education, ISBN-13: 978-0-13-277420-8. | | | | | |
| 2- Main references (sources) | | | * ***“Digital Fundamentals”***, Eleventh Edition, Thomas L. Floyd, 2015, Pearson Education, ISBN 13: 978-1-292-07598-3. * ***“Digital Electronics: Principles, Devices and Applications”***, Anil K. Maini, 2007, John Wiley & Sons, Ltd. ISBN: 978-0-470-03214-5. | | | | | |
| Floyd “DIGITAL FUNDAMENTALS” | | | Recommended supporting books and references (scientific journals,  Reports......) | | | | | |
| WWW.IEEE.com | | | Electronic references, Internet sites | | | | | |

