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| **College**  | College of Engineering and Technology |
| **Department** | Electrical Engineering Department |
| **Program** |  |
| **Course Title** | Digital logic and digital electronics laboratory  | **Course Number:** | 12120202   |
| **Year** | 2023/2024 | **Semester:** | 2nd  |
| **Prerequisite(s)** | Digital logic and digital electronics course  |
| **Instructor** | **Eng. Eman Abu Hany** |
| **Instructor's e-mail** | e.abuhany@ptuk.edu.ps |
| **Office Hours** |  |
| **Class Time** |   | **Class Room:** | B102 |
| **Course objective** | The student should acquire a knowledge and understanding of:* Digital logic design lab components such as breadboard, Ic’s, 7-segment and Led.
* Operation of digital gates including AND, OR, NAND, NOR and XOR gate.
* Learn how to simplify functions and implement those using basic gates.
* Using Karnaugh map in function simplification.
* Implementing different functions using NAND and NOR gates only.
* Operation of flip-flop circuits.
* Displaying numbers and counters on 7-segment.
* Using multiplexers and decoders in digital circuits.
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| **Textbook(s)** | Manual of Digital Electronic Lab |
| **Other required material (References):** |  Digital - Fundamentals, Thomas L. flyod. |
| **Other Resources used (e.g. e-learning, field visits, periodicals, software, etc. )** | MULTISIM or Proteus Simulation Programs |

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| **Assessment Type** | **Weight** | **Date(s)** |
| **Mid Exam**  | 30% |  |
| **Semester work / Activities** | 30% |  |
| **Final Exam** | 40% |  |
| **Total** | 100% |  |

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| **Course Weekly Breakdown** |
| **Weeks** | **Date** | **Topics Covered** |
| 3 |  |  **Basic logic circuits** |
|  3 |  |  **Code converters, coders** |
| 4 |  |  **Arithmetic circuits** |
| 1 |  |  **Bistable multivibrators** |
| 2 |  |  **Counting circuits**  |
| 1 |  |  **Multiplex mode** |