

MODULE DESCRIPTION FORM

| | |
|--|---|
| Module Name: | |
| Digital Electronics II | |
| Module Code: | |
| MED-406 | |
| Semester / Year: | |
| Second Semester- 2026 | |
| Date of Preparation of this Description: | |
| 11-2-2026 | |
| Available Attendance Formats: | |
| Class Attendance | |
| Total Credit Hours / Total Units: | |
| 56 \ 3 | |
| Name of the Course Coordinator (if there are multiple names): | |
| Qayssar Ayad Ahmed qayssar.ayad@uowa.edu.iq | |
| Module Objectives: | |
| Module Objectives | <ol style="list-style-type: none">1- Building the student scientifically and qualifying him to understand the principles of Digital electronics and its applications in some scientific and engineering fields.2- Urging the student to be creative and think about specialization projects and keep pace with the development taking place in this field in terms of the basis of digital electronics in engineering work systems.3- Identify the types of digital electronics and some of their practical applications. |
| 1. Teaching and Learning Strategy | |
| Strategy: | The main strategy that will be adopted in developing the main features of this module to encourage student's participation in the exercises, while at the same time refining and expanding their critical thinking skill. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. |

| 2. Module Structure | | | | | |
|---------------------|-------|---|---|--------------------------|---|
| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
| 1-2 | 4 | Latches and flip flops | S-R FF, D FF, J-K FF, and T FF, applications | Lectures DATA SHOW | Surprise exams and classroom activities |
| 3-4 | 4 | Counters, asynchronous counter | (ripple counters), up-down counters, | Lectures DATA SHOW | Surprise exams and classroom activities |
| 5-6 | 4 | Synchronous counters | design, up-down) counters mod-counters, applications | Lectures DATA SHOW | Surprise exams and classroom activities |
| 7-8 | 4 | Registers | shift register, serial in/serial out, serial in/parallel out, parallel in/parallel out, parallel in /serial out | Lectures DATA SHOW | Surprise exams and classroom activities |
| 9-10 | 4 | Ring counter, Johanson counters, applications | applications, square wave generators, one shot | Lectures DATA SHOW | Surprise exams and classroom activities |
| 11-12 | 4 | A/D and D/A | Explanation and applications of conversions | Lectures DATA SHOW | Surprise exams and classroom activities |
| 13-14 | 4 | Memory types | RAM, ROM, flash RAM. | Lectures DATA SHOW | Surprise exams and classroom activities |

3. Module Evaluation

Quizzes (4%), Assignment (3%), lab. (10%), attendance (3%), Mid exam (30%), FINAL exam (50%)

4. Learning and Teaching Resources.

| | |
|--|--|
| Required textbooks (curricular books, if any) | Thomas-L.-Floyd-Digital-Fundamentals-Prentice-Hall-2015 |
| Main references (sources) | Thomas-L.-Floyd-Digital-Fundamentals-Prentice-Hall-2015 |
| Recommended books and references (scientific journals, reports...) | Internet files. All solid scientific journals and sites that are related to the broad concept of digital electronics. |

**University of Wraith Al-Anbiyaa / College of Engineering / Biomedical Engineering
Department Course Description**

| | |
|------------------------------------|--|
| Electronic References, Websites | Tracking Scientific websites to view recent developments in the prescribed subject For fourth year students. |
|------------------------------------|--|