**Course Specification**

**(**IT 111 Electronics**)**

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| --- | --- |
| **University:** | Helwan University |
| **Faculty:** | Faculty of Computers & Information |
| **Department:** | Information Technology |

**1. Course Data**

|  |  |
| --- | --- |
| **Code:** |   **IT 111**  |
| **Course title:** | Electronics |
| **Level:** | 1 |
| **Specialization:** | General |
| **Credit hours:** | 3 hours |
| **Number of learning units (hours):**  | ( 3) theoretical (2 ) practical |

**2. Course Objective**

 Introduction, Insulators, Conductors, Semiconductors, Resistors, Capacitors, Coils, Diodes, Application of diodes, Rectifiers, Power supplies, LEDs, Voltage regulators, Transistors, Amplifiers, Timers, Applications

**3. Intended Learning Outcomes:**

1. **Knowledge and Understanding:**

A28. Describe the foundations of computer science: Hardware, Software and Networking.

1. **Intellectual Skills**

B20. Generate methodologies for Problem Solving.

1. **Professional and Practical Skills**

C7. Operate IT equipment efficiently.

C13. Construct IT facilities.

1. **General and Transferable Skills**

D13. Use Designing skills to solve problems effectively.

**4. Course contents**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **No. of hours** | **Lecture** | **Tutorial/ Practical** |
| Introduction to Electricity and Electronics.  | 3 | 1 | 2 |
| Electric Quantities and Components.  | 3 | 1 | 2 |
| Electric Circuits.  | 3 | 1 | 2 |
| Analyzing Series Circuits.  | 3 | 1 | 2 |
| Analyzing Parallel Circuits.  | 3 | 1 | 2 |
| Complex Circuits and Network Analysis.  | 3 | 1 | 2 |
| Electrical Power Sources and Electrical Materials.  | 3 | 1 | 2 |
| Direct-Current Test Equipment.  | 3 | 1 | 2 |
| Magnetism and Electromagnetism.  | 3 | 1 | 2 |
| Alternating Voltage and Current.  | 3 | 1 | 2 |

**Mapping contents to ILOs**

|  |  |
| --- | --- |
| Topic | Intended Learning Outcomes (ILOs) |
| Knowledge and understanding | Intellectual Skills | Professional and practical skills | General and Transferable skills |
| Introduction to Electricity and Electronics.  | A28 |  | C13 |  |
| Electric Quantities and Components.  | A28 |  | C13 | D13 |
| Electric Circuits.  | A28 | B20 | C13 |  |
| Analyzing Series Circuits.  | A28 |  | C7 | D13 |
| Analyzing Parallel Circuits.  | A28 |  | C7 | D13 |
| Complex Circuits and Network Analysis.  | A28 | B20 | C13,C7 |  |
| Electrical Power Sources and Electrical Materials.  | A28 |  | C13 | D13 |
| Direct-Current Test Equipment.  | A28 | B20 | C13 |  |
| Magnetism and Electromagnetism.  | A28 |  | C13 |  |
| Alternating Voltage and Current.  | A28 |  | C7 | D13 |

**5. Teaching and Learning Methods**

**-** Class Lectures

**-** Highly lab-based courses

**6. Teaching and Learning Methods for students with limited capability**

* Using data show
* e-learning management tools

**7. Students Evaluation**

1. **Used Methods**

- Lab exam

- Assignments

- Lab work

 - Written exams

**b) Time**

Assessment 1: Test1 Week 4

Assessment 2: Test 2 Week 7

Assessment 3: Midterm exam Week 10

Assessment 4: Practical exam Week 12

Assessment 5: final written exam Week 14

**c) Grades Distribution**

Mid-term Examination 30 %

Final-Year Examination 50 %

Semester Work 10 %

Practical Exam 10 %

 Total 100%

Any formative only assessments

**List of Books and References**

**a) Notes**

* Course Notes
* Handouts

**b) Mandatory Books**

 **Title:** Fundamentals of Electronics, DC/AC Circuits

 **Author(s):** David Terrell

 **Publisher:** Thomson Delmar Learning, 2004

 **ISBN:** 978-0827353404

**c) Suggested Books**

**Title:** Electronics Fundamentals: Circuits, Devices and Applications

 **Author(s):** Thomas L. Floyd

 **Publisher:** Prentice Hall, 2003

 **ISBN:** 9780132197090

**d) Other publications**

 - Periodicals, Web Sites … etc

**Course Coordinator: Prof. Dr. Iraqi Khalifa**

**Chairman of the Department: Prof. Dr.**