**Ministry of Higher Education and Scientific Research**

**Supervision and Scientific Evaluation Body**

**Quality Assurance and Academic Accreditation Office**

**Course Description Sample**

**Subject:** ELECTRONICS CIRCUIT

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| This course description provides a brief survey of the most important characteristics, expected learning output, showing whether students have made full use f the learning opportunities. These characteristics have to be matched with the description of the program. |

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| 1. Educational Institution | Shatt Al-Arab University College |
| 2. Department / Center | Medical Device Technology Engineering |
| 3. Course Title /Code | MIET2102/Electronic circuit |
| 4. Lecturer Name | Zahra kadhum farhood |
| 5. Type of Teaching | Attendance |
| 6. Academic Year /Term | Midterm |
| 7. Total No. of Teaching Hours | 125 hours / every week 4 hours |
| 8. Date f Preparing this Course Description | 1/9/2024 |

9. **Course Objectives**

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| 1. The graduate gets scientific and applied skills of electronic circuits.  2. The graduated students will gain the ability of knowledge of different parts of electronic circuits.  3. Development and training the engineering technical staffs on the electronic circuits.  4. Preparation the research and studies to improve and develop the action of electronic circuits.  5. Prepare application engineers in technical and electronic engineering.  6. Put the proposals and alternatives for the electronic devices. |
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10. **Course Output, Methodology and Evaluation**

(A) **Cognitive Objectives**

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| • Identify the general characteristics of electronic devices.  • Be able to describe the different types of electronic classes.  • Identify the use of equivalent circuits to analyze series, parallel and parallel electronic networks.  • Be able to predict the output response of electronic networks.  • Identify the analysis and scope of applications of electronic devices.  • Identify the basic construction and operation of different types of electronic classes.  • Be able to test different types of electronic stations.  • Be able to determine DC current levels for a variety of important electronic circuits.  • Understand how to measure important voltage levels for electronic circuits.  • Begin to understand the troubleshooting process as it is applied to electronic configurations.  • Learn how to use the equivalent model to find important AC current parameters for an amplifier. |

(B) **Skill Objectives Related to the Program**:

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| • Develop a clear understanding of the basic operations and properties of electronic devices.  • Develop a sense of stability factors in electronic circuits.  • Develop some skills in troubleshooting and repairing AC amplifier networks |

**Methods of Teaching and Learning**

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| Study lectures  Discussions between different student groups about the application of theories  Establishing workshops and theoretical presentation on how to use the basics of drawing to draw simple and complex electrical and electronic circuits. Use of various means to increase understanding and clarification. Extra-curricular discussions and assignments to increase understanding of graphic examples and applications used in applications and electronic circuits |

**Methods of Evaluation**

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| Quarterly exams |
| Quizzes |
| Other extra-curricular exams |

(C) **Sentimental and Value Objectives**

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| A1- Enhancing thinking and instilling moral responsibility for learning and thinking in a set of protective solutions to solve mathematical problems and how to analyze electronic circuits and draw them with the possibility of printing them locally or externally.  A2- Developing the student's thinking strategy to analyze electrical circuits in different ways.  A3- Respecting oneself and others through purposeful discussions to improve electronic skills with full knowledge of the latest programs and their accessories in the process of designing and manufacturing various electronic circuits.  A4- Developing modern electronic techniques and skills and the tools necessary to practice the engineering profession and trying to use available techniques to produce more modern forms |

D) **General and Qualitative Skills (other skills related to the ability of employment and personal development)**

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| D1- Communication skills and conveying information in the correct way  D2- Analysis and investigation to produce complex electronic circuits using available tools  D3- Using modern technology to draw electronic circuits  D4- The importance of teamwork to produce what is required, as the goal is not achieved except with the presence of an integrated team |

11. **Course Structure**

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| **Week** | **No of Hours** | **Required Learning Output** | **Title of Subject** |
| 1 | 4  working hours per week | Introduction / Semiconductors materials |  |
| 2 |  | Diode Configurations/ Lab 1: Diode characteristics |  |
| 3 |  | Diode Networks with a dc and ac Source/ Lab 2: Half – wave Rectifier/ Lab 3: full wave Rectifier Week 4 Lab 4: Filter for Halve – wav |  |
| 4 |  | Zener Diodes/ Lab12: Zener Diode |  |
| 5 |  | Bipolar junction transistor/ Lab 5: Voltage Doubler |  |
| 6 |  | DC biasing BJTs/ Lab 6: Voltage Tripler Lab |  |
| 7 |  | Multiple BJT Networks/ Lab 7: Positive Series Clipper Lab 8: Negative Series Clipper |  |
| 8 |  | Field effect transistor and MOSFET Lab 9: positive parallel Clipper / |  |
| 9 |  | Lab 10: Negative parallel Clipper/ Depletion-Type MOSFET |  |
| 10 |  | Enhancement type MOSFET/ |  |
| 11 |  | Lab 11: Clamper |  |
| 12 |  | BJT Transistor Modeling and Effect of RL and Rs |  |
| 13 |  | Lab13: Fixed Vi , Variable RL Zener Diode |  |
| 14 |  | Lab14: Fixed RL , Variable Vi Zener Diode |  |
| 15 |  | Lab14: Fixed RL , Variable Vi Zener Diode |  |

12.**Infrastructure**

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| a. Textbooks | Electronic devices and circuit theory 11th edition, Robert L. Boylestad , Louis Nashelsky |
| b. References | Electronic devices and circuit theory 11th edition, Robert L. Boylestad , Louis Nashelsky |
| c. Recommended books and periodicals (journals, reports, etc.) |  |
| d. Electronic references, internet websites, etc | https://www.coursera.org/browse/physical-science-and-engineering/electrical engineering |