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| http://euhr.edu.eg/Files/170/Logo.jpg كلية الهندسة بشبرا | Model No.12 Course Specifications : Electronic Circuit 3B |  |
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| **University** : Benha university |

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| **Faculty** : Faculty of Engineering - Shoubra |

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| **Department** : Electrical Engineering Department |

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| **1- Course Data** |
| |  |  |  |  | | --- | --- | --- | --- | | Course Code : ECE322 | Course Title : Electronic Circuit 3B | Study Year : 3rd year communication | | | Specialization : |  | | | | Teaching Hours: | | | | | Lecture : 3 | Tutorial : 3 | Practical : |  | |

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| **2-  Course Aim** |
| For students undertaking this course, the aims are to: |
| |  | | --- | | 2.1- - Ensure that the graduates have an understanding of the highest standards of personal and professional integrity, and ethical responsibility in the practice of electronics and communication engineering. | | 2.2- -Understand the electronic circuits that efficiently used in many systems and applications. | | 2.3- -Enable students to implement and design electronic circuits. | | 2.4- -Use programming packages in analyzing and designing the electronic circuits. | |

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| **3- Intended Learning Outcomes of Course (ILOS)** |
| |  | | --- | | **a-  Knowledge and Understanding** | | On completing this course, students will be able to: | | |  | | --- | | a- 4- Describe principles of design including elements design, process and/or a system related to electronic circuits. | | a- 14 - Define basics of design and analyzing electronic engineering systems, while considering the constraints of applying inappropriate technology and the needs of commercial risk evaluation. | | |  | | | **b-  Intellectual Skills** |  | | At the end of this course, the students will be able to: |  | | |  | | --- | | b- 4- Combine, exchange, and assess different ideas, views, and knowledge from a range of sources. | | b- 5- Assess and evaluate the characteristics and performance of components, systems and processes. | | b- 16- Synthesize and integrate electronic systems for certain specific function using the right equipment. | |  | |  | | | **c-  Professional Skills** |  | | On completing this course, the students are expected to be able to: |  | | |  | | --- | | c- 3- Create and/or re-design a process, component or system, and carry out specialized engineering designs. | | c- 17- Identify appropriate specifications for required devices. | |  | |  | | | **d-  General Skills** |  | | At the end of this course, the students will be able to: |  | | |  | | --- | | d- 3 - Communicate effectively | | d- 4 -Demonstrate efficient IT capabilities. | | d- 7- Search for information and engage in life-long self learning electronics. | |  | |  | | |

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| **4- Course Contents** |
| |  |  | | --- | --- | | **No.** | **Topics** | | 1 | Operational amplifier circuits | | 2 | Differential amplifiers | | 3 | Function generators | | 4 | Oscillators | | 5 | active filters | | 6 | Voltage regulators | | 7 | phase locked loop circuits | | 8 | using programming packages in analyzing and designing the electronic circuits- PROTEUS | |

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| **5- Teaching and Learning Methods** |
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| |  | | --- | | 5.1- Lectures | | 5.2- Class activity | | 5.3- Case study | | 5.4- Assignments / homework | |

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| **6- Teaching and Learning Methods of Disables** |
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| **7- Student Assessment** |
| |  | | --- | | **a- Student Assessment Methods** | | |  |  | | --- | --- | | 1 | Assignments  to assess   knowledge and intellectual skills. | | 2 | Quiz  to assess   assess knowledge, intellectual and professional skills. | | 3 | Mid-term exam   to assess   knowledge, intellectual, professional and general skills. | | 4 | Oral exam   to assess   knowledge and intellectual skills. | | 5 | Final exam   to assess   knowledge, intellectual, professional and general skills. | | |  | | | **b- Assessment Schedule** |  | | |  |  |  | | --- | --- | --- | | **No.** | **Assessment** | **Week** | | 1 | Reports | 4,9 | | 2 | Quizzes | 3, 6, 10, 12 | | 3 | Mid-term exam | 8 | | 4 | Oral Exam | 14 | | 5 | Final exam | 15 | |  | |  | | | **c- Weighting of Assessments** |  | | |  |  | | --- | --- | | **Assessment** | **Weight** | | Mid\_Term Examination | 10 % | | Final\_Term Examination | 60 % | | Oral Examination | 20 % | | Practical Examination | 0 % | | Semester work | 5 % | | Other types of assessment | 5 % | | Total | 100 % | |  | |  | | |

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| **8- List of References** |
| |  | | --- | | **a- Course Notes** | | |  | | --- | | 1- Course notes | | | **b- Books** | | |  | | --- | | 1- Robert L. Boylestad, Electronic devices and circuit theory, 8th Edition , Prentice hall,2001 | | 2- Thomas L. Floyd, Electronic devices, 7th Edition, Pearson Education, Limited, 2011 | | | **c- Recommended Books** | | |  | | --- | | 1- Kenneth Carless Smith, Adel S. Sedra, Microelectronic Circuits,6 th edition,Oxford University Press, Incorporated, 2010 | | |

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| **- Course Coordinator :    Rokaia Mounir Zaki Emam** |

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| **- Head of Department :     سيد أبو السعود سيد ورد** |

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| http://euhr.edu.eg/Files/170/Logo.jpg كلية الهندسة بشبرا | **Model No.11A Course Specifications : Electronic Circuit 3B** |  |
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| **University** : Benha university |

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| **Faculty** : Faculty of Engineering - Shoubra |

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| **Department** : Electrical Engineering Department |

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| **Matrix of Knowledge and Skills of the course** |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **No.** | **Topics** | **week** | **Basic Knowledge** | **Intellectual Skills** | **Professional Skills** | **General Skills** | | 1 | Operational amplifiers | 1 | a4 | b4, b5 | c3,c17 | d3 | | 2 | Operational amplifier circuits | 2 | a4 | b4, b5 | c3,c17 | d3 | | 3 | Bias Current And Offset Voltage Compensation | 3 | a4, a14 | b4, b5,b16 | c3,c17 | d3,d4 | | 4 | Differential amplifiers | 4 | a4, a14 | b4, b5 | c3,c17 | d3,d4 | | 5 | Function generators | 5 | a14 | b4, b5 | c3,c17 | d3,d4 | | 6 | Oscillators | 6 | a4, a14 | b4, b5 | c3,c17 | d3,d4 | | 7 | Oscillators With LC Feedback Circuits | 7 | a4, a14 | b4, b5 | c3,c17 | d3,d4 | | 8 | Mid term exam | 8 | a4, a14 | b4, b5,b16 | c3,c17 | d3,d4 | | 9 | active Low-pass Filters | 9 | a4 | b4, b5 | c3,c17 | d3,d4 | | 10 | active High-Pass Filters | 10 | a4, a14 | b4, b5 ,b16 | c3,c17 | d3,d4 | | 11 | Voltage regulators | 11 | a4 | b4, b5 | c3,c17 | d3,d4 | | 12 | phase locked loop circuits | 12 | a4, a14 | b4, b5 | c3,c17 | d3,d4 | | 13 | using programming packages in analyzing and designing the electronic circuits- PROTEUS | 13 | a4, a14 | b4, b5,b16 | c3,c17 | d3,d4,d7 | | 14 | Oral exam | 14 | a4, a14 | b4, b5 ,b16 | c3,c17 | d3,d4,d7 | | 15 | Final exam | 15 | a4, a14 | b4, b5 ,b16 | c3,c17 | d3,d4 | |

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| **- Head of Department :     سيد أبو السعود سيد ورد** |