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| http://euhr.edu.eg/Files/170/Logo.jpgكلية الهندسة بشبرا  | Model No.12Course 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**  |
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| 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: |
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| 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)**  |
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| **a-  Knowledge and Understanding**  |
| On completing this course, students will be able to: |
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| 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.  |

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| **b-  Intellectual Skills**  |  |
| At the end of this course, the students will be able to: |  |
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| 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.  |

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| **c-  Professional Skills** |  |
| On completing this course, the students are expected to be able to: |  |
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| 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.  |

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| **d-  General Skills**  |  |
| At the end of this course, the students will be able to: |  |
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| 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**  |
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| **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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| 6.1- NOT FOUND  |

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| **7- Student Assessment**  |
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| **a- Student Assessment Methods** |
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| 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.  |

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| **b- Assessment Schedule** |  |
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| **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  |

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| **c- Weighting of Assessments** |  |
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| **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**  |
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| **a- Course Notes** |
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| 1- Course notes  |

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| **b- Books** |
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| 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  |

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| **c- Recommended Books** |
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| 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.jpgكلية الهندسة بشبرا | **Model No.11ACourse 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**  |
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| **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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| **- Course Coordinator :    Rokaia Mounir Zaki Emam** |

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