**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification. |

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| BAGHDAD | 1. Teaching Institution |
| ENERGY | 2. University Department/Centre |
| ELECTRONICS 215ENE | 3. Course title/code |
| BACALORIOUS | 4. Programme(s) to which it contributes |
| WEAKELY | 5. Modes of Attendance offered |
| YEARLY | 6. Semester/Year |
| 60 HOURS | 7. Number of hours tuition (total) |
| 2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course | |
| The student will be able to:  1- Learn how to develop and employ circuit models for elementary electronic components, e.g. resistors, sources, inductors, capacitors, diodes and transistors.  2- Develop the capability to analyze and design simple circuits containing non-linear elements such as transistor using the concepts of load lines, operation points and incremental analysis. | |
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| 10· Learning Outcomes, Teaching ,Learning and Assessment Methods |
| 1- Learn how to develop and employ circuit models for elementary electronic components, e.g resistors, sources, inductors, capacitors, diodes and transistors..  2- Develop the capability to analyze and design simple circuits containing non-linear elements. such as transistor using the concepts of load lines, operation points and incremental analysis. |
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| Teaching and Learning Methods |
| Lectures  Discussion  Application learning |
| Assessment methods |
| 1-homeworkes  2-daily and monthly quizzes  3-final exams |
| C. Thinking Skills  C1.understanding  C2.solve problems  C3.learning  C4. |
| Teaching and Learning Methods |
| Lectures  Discussion  Application problems |
| Assessment methods |
| 1-homeworkes  2- daily and monthly quizzes  3- final exams |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1.give the student extra skills about engineering Elecronics ccts.give him an assessment skills about engineering system operation |

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| 11. Course Structure | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | Hours | Week |
| Quizzes and Homework | Lecture and discussion | INTRODUCTION | INTRODUCTION | 2 | 1 |
| Quizzes and Homework | Lecture and discussion | Introduction to semiconductor diodes | Introduction to semiconductor diodes | 2 | 2 |
| Quizzes and Homework | Lecture and discussion | Zener diode | Zener diode | 2 | 3 |
| Quizzes and Homework | Lecture and discussion | Diode applications | Diode applications | 2 | 4 |
| Quizzes and Homework | Lecture and discussion | Clipping circuits | Clipping circuits | 2 | 5 |
| Quizzes and Homework | Lecture and discussion | Clipping circuits | Clipping circuits | 2 | 6 |
| Quizzes and Homework | Lecture and discussion | Clamping circuits | Clamping circuits | 2 | 7 |
| Quizzes and Homework | Lecture and discussion | Clamping circuits | Clamping circuits | 2 | 8 |
| Quizzes and Homework | Lecture and discussion | Filters(inductive & capacitive filters) | Filters(inductive & capacitive filters) | 2 | 9 |
| Quizzes and Homework | Lecture and discussion | L and II section filters | L and II section filters | 2 | 10 |
| Quizzes and Homework | Lecture and discussion | Introduction to transistors | Introduction to transistors | 2 | 11 |
| Quizzes and Homework | Lecture and discussion | Transistors types | Transistors types | 2 | 12 |
| Quizzes and Homework | Lecture and discussion | Transistor applications | Transistor applications | 2 | 13 |
| Quizzes and Homework | Lecture and discussion | Transistor applications | Transistor applications | 2 | 14 |
| Quizzes and Homework | Lecture and discussion | Transistor applications | Transistor applications | 2 | 15 |
| Quizzes and Homework | Lecture and discussion | D.C.& A.C.analysis of transistor circuit | D.C.& A.C.analysis of transistor circuit | 2 | 16 |
| Quizzes and Homework | Lecture and discussion | D.C.& A.C.analysis of transistor circuit | D.C.& A.C.analysis of transistor circuit | 2 | 17 |
| Quizzes and Homework | Lecture and discussion | D.C.& A.C.analysis of transistor circuit | D.C.& A.C.analysis of transistor circuit | 2 | 18 |
| Quizzes and Homework | Lecture and discussion | Transistor Equivalent circuit(small signal) | Transistor Equivalent circuit(small signal) | 2 | 19 |
| Quizzes and Homework | Lecture and discussion | Transistor Equivalent circuit(small signal) | Transistor Equivalent circuit(small signal) | 2 | 20 |
| Quizzes and Homework | Lecture and discussion | Common emitter model | Common emitter model | 2 | 21 |
| Quizzes and Homework | Lecture and discussion | Common emitter model | Common emitter model | 2 | 22 |
| Quizzes and Homework | Lecture and discussion | FET transistor | FET transistor | 2 | 23 |
| Quizzes and Homework | Lecture and discussion | Thyristor applications | Thyristor applications | 2 | 24 |
| Quizzes and Homework | Lecture and discussion | Triac applications | Triac applications | 2 | 25 |
| Quizzes and Homework | Lecture and discussion | Diac applications | Diac applications | 2 | 26 |
| Quizzes and Homework | Lecture and discussion | Operation amplifier | Operation amplifier | 2 | 27 |
| Quizzes and Homework | Lecture and discussion | Operation amplifier | Operation amplifier | 2 | 28 |
| Quizzes and Homework | Lecture and discussion | FET transistor | FET transistor | 2 | 29 |
| Quizzes and Homework | Lecture and discussion | Thyristor applications | Thyristor applications | 2 | 30 |

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| 12. Infrastructure | |
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| 1- Electronic Devices and Circuit Theory by L.Bolyestand and Louis  Nashelsky10th edition Pentict-Hall Inc.2009.  2- Electronic Circuit Analysis And Design by Donald A.Neamen 2nd edition McGraw-Hill Higher Education companies 2001.  3- Electronic Devieces & Circuits by B.L.Theraja 2007. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER |
| Internet websites | Special requirements (include for example workshops, periodicals, IT software, websites) |
|  | Community-based facilities  (include for example, guest  Lectures , internship , field studies) |

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| 13. Admissions | |
|  | Pre-requisites |
|  | Minimum number of students |
|  | Maximum number of students |