**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 |
| PRINCIPALS OF ELECTRICITY/101ENPE | 3. Course title/code |
| BACALORIOS | 4. Programme(s) to which it contributes |
| WEAKELY | 5. Modes of Attendance offered |
| YEARLY | 6. Semester/Year |
| 75 HOURS | 7. Number of hours tuition (total) |
| 2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course | |
| Students will be have a good practical and theoretical information about D.C. and A.C. electrical circuits and their applications | |
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| 10· Learning Outcomes, Teaching ,Learning and Assessment Method |
| 1. Knowledge and Understanding   1-Become adept at using various methods of circuit analysis, including simplifiedmethods such as series-parallel reductions, voltage and current dividers, and the node and mesh methods.  2- Appreciate the consequences of linearity, in particular the principle of superpositionand Thevenin-Norton equivalent circuits. |
| B. Subject-specific skills  1- Become adept at using various methods of circuit analysis, including simplifiedmethods such as series-parallel reductions, voltage and current dividers, and the node and mesh methods.  2- Appreciate the consequences of linearity, in particular the principle of superpositionand Thevenin-Norton equivalent circuits. |
| 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. |
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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1..give the student extra skills about engineeringElecrtical ccts.  D2.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  homework  exercises  report  case study  tests | 1- Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Introduction | Introduction | 3 | 1 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Units and Notations | Units and Notations | 3 | 2 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Resistance | Resistance | 3 | 3 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Ohm’s Law | Ohm’s Law | 3 | 4 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | D.C. Series Circuits | D.C. Series Circuits | 3 | 5 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | D.C. Parallel Circuits | D.C. Parallel Circuits | 3 | 6 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Kirchhoff’s Voltage Law | Kirchhoff’s Voltage Law | 3 | 7 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Kirchhoff’s Current Law | Kirchhoff’s Current Law | 3 | 8 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Current Sources | Current Sources | 3 | 9 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Sources Conversion | Sources Conversion | 3 | 10 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Mesh and Nodal Analysis | Mesh and Nodal Analysis | 3 | 11 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | ∆-Y and Y-∆ conversions | ∆-Y and Y-∆ conversions | 3 | 12 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Superposition Theorem | Superposition Theorem | 3 | 13 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Thevenin’s Theorem | Thevenin’s Theorem | 3 | 14 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Norton’s Theorem | Norton’s Theorem | 3 | 15 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Maximum Power Transfer Theorem | Maximum Power Transfer Theorem | 3 | 16 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Sinusoidal and Alternating Waves | Sinusoidal and Alternating Waves | 3 | 17 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Response of basic resistor,inductor and capacitor elements to sin voltage | Response of basic resistor,inductor and capacitor elements to sin voltage | 3 | 18 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Complex Numbers | Complex Numbers | 3 | 19 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Series and Parallel A.C. Circuits | Series and Parallel A.C. Circuits | 3 | 20 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Phase Drawing | Phase Drawing | 3 | 21 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Mesh and Nodal Analysis | Mesh and Nodal Analysis | 3 | 22 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | ∆-Y and Y-∆ conversions | ∆-Y and Y-∆ conversions | 3 | 23 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Superposition Theorem | Superposition Theorem | 3 | 24 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Thevenin’s Theorem | Thevenin’s Theorem | 3 | 25 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Norton’s Theorems | Norton’s Theorems | 3 | 26 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Max. Power Transfer Theorems | Max. Power Transfer Theorems | 3 | 27 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Resonance | Resonance | 3 | 28 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Resonance | Resonance | 3 | 29 |
| quizzes  homework  exercises  report  case study  tests | Detailed lecture notes .  2- Preparation and participation will be important for learning notes(you will be responsible for studying the notes prior each lecture).  3- Several active learning techniques.  4- Homework problems will be assigned | Resonance | Resonance | 3 | 30 |

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| 12. Infrastructure | |
| 1. Introductory Circuit Analysis by Robert L.Boylestand 5th edition  Merril Publishing Company 1987.  2. Electrecal Circuits Fundamentals by Thomas L.Floyd 8th edition Prentice Hall 2010.  3. and Basic Electrical Engineering by B.L.Theraja 2008. | 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 |