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| **TEMPLATE FOR COURSE SPECIFICATION**   |  | | --- | | HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |   **COURSE SPECIFICATION**   |  | | --- | | 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. |      |  |  | | --- | --- | | Collage of Engineering  University of Baghdad | ***1. Teaching Institution*** | | Electrical Engineering Department  (EED) | ***2. University Department/Centre*** | | Fundamentals of electrical engineering /EE107  The course is designed for university students and to get more knowledge about electric circuits that have special cases and more practical situations. The course has 30 lessons. Each lesson is designed to learn, develop and analyze new forms of electric circuits.  To learn the students the basic components in electrical engineering , electrical devices and the analysis of the electrical circuits.  3 theories and 1 tutorial. | ***3. Course title/code & Description*** | | Electrical Engineering (EE) | ***4. Programme(s) to which it Contributes*** | | Annual system ;there is only one mode of delivery , which is a "Day Program". The students are full time students , and on campus .They attend full day program in face-to-face mode. The academic year is composed of 30- week regular subjects. | ***5. Modes of Attendance offered*** | | 1st & 2st / Academic Year 2014-2015 | ***6. Semester/Year*** | | 120 hrs. / 4 hrs. per week | ***7. Number of hours tuition (total)*** | | April -18 /2015 | ***8. Date of production/revision of this specification*** | | ***9. Aims of the Course*** | | | The course is designed for university students and to get more knowledge about electric circuits that have special cases and more practical situations. The course has 30 lessons. Each lesson is designed to learn, develop and analyze new forms of electric circuits.   1. How to relate the skills and concepts learned from fundamentals of electrical engineering to understand electrical circuits. 2. How to use the learned skills to understand, analyzed, and design electrical circuits. 3. Representation of an Introduction to complicated electrical circuits. | |  |  | | --- | | ***10·*** ***Learning Outcomes*** | | Upon Completion of this course the students will acquire the following skills:  1. An ability to read and comprehend electrical circuits at an appropriate level  2. An ability both to follow and correctly to analyze the circuits of appropriate degrees of complexity.  3. An understanding of electrical circuits equations, and an ability to use it correctly.  4. An appreciation of the important connection between the ideas in the electrical circuits theories and the practical applications. | | ***11.*** ***Teaching and Learning Methods*** | | 13.Lectures.  14.Tutorials.  15.Homework and Assignments.  16.Tests and Exams.  17.In – Class Questions and Discussions.  18. Connection between Theory and Application.  19. Extracurricular Activities.  20. Seminars.  21.In-and Out-Class oral conservations.  22. Reports, Presentations, and Posters. | | ***12. Assessment Methods***  1. Examinations, Tests ,and Quizzes.  2. Extracurricular Activities.  3. Students Engagement during Lectures.  4. Responses Obtained from Students Questionnaire about Curriculum and Faculty Member (Instructor). | | ***13. Grading Policy***  1. Quizzes:  - There will be at least seven closed books and notes quizzes during the academic year.  -The quizzes will count 25% of the total course grade.  2. Oral assessment:  - The students are encouraged to participate their ideas to solve the problems during the lecture.  - The Seminar will count 5% of the total course.  3. Final Exam:  - The final exam will be comprehensive, closed books and notes, and will take three hours from 9:00 – 12:00 AM.  - The final exam will count 70% of the total course grade.  **Grading Units**   |  |  | | --- | --- | | Quizzes (1st and 2nd Semester) | 30% | | Final Exam | 70% | | Total | 100% | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ***14. Course Structure*** | | | | | | | Assessment Method | Teaching Method | Unit/Module or  Topic Title | Los  (Article 10) | Hours | Week | | 1-4 of article (12) | 1-12 of article (11) | Introducing the SI units. And resistance- resistivity | a,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 1 | | 1-4 of article (12) | 1-12 of article (11) | Temperature coefficients of resitance. | a,1,m,n,o.p,q,r | 4  3 the.  1 tut | 2 | | 1-4 of article (12) | 1-12 of article (11) | Series and parallel connections. | b,1,m,n,o.p,q,r | 4  3 the.  1 tut | 3 | | 1-4 of article (12) | 1-12 of article (11) | Star / delta & delta/star transformation. | b,1,m,n,o.p,q,r | 4  3 the.  1 tut | 4 | | 1-4 of article (12) | 1-12 of article (11) | Ohm's law | b,1,m,n,o.p,q,r | 4  3 the.  1 tut | 5 | | 1-4 of article (12) | 1-12 of article (11) | Kirchhoff's law | b,1,m,n,o.p,q,r | 4  3 the.  1 tut | 6 | | 1-4 of article (12) | 1-12 of article (11) | D.C. networks theorems for dependent & independent source Substitution & reciprocity theorems. | b,1,m,n,o.p,q,r | 4  3 the.  1 tut | 7 | | 1-4 of article (12) | 1-12 of article (11) | Thevenin theorem | b,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 8 | | 1-4 of article (12) | 1-12 of article (11) | Norton theorem | b,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 9 | | 1-4 of article (12) | 1-12 of article (11) | Superposition theorem | b,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 10 | | 1-4 of article (12) | 1-12 of ar  ticle (11) | Maximum power transfer | c,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 11 | | 1-4 of article (12) | 1-12 of article (11) | Spring Break | c,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 12 | | 1-4 of article (12) | 1-12 of article (11) | Spring Break | c,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 13 | | 1-4 of article (12) | 1-12 of article (11) | Self and mutual inductance in D.C. circuits. | c,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 14 | | 1-4 of article (12) | 1-12 of article (11) | Basic electrostatics – capacitors in D.C. circuits. | c,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 15 | | 1-4 of article (12) | 1-12 of article (11) | Alternating voltage and current. | d,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 16 | | 1-4 of article (12) | 1-12 of article (11) | Single phase circuits | d,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 17 | | 1-4 of article (12) | 1-12 of article (11) | Complex notations & phasor diagram | d,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 18 | | 1-4 of article (12) | 1-12 of article (11) | Network theorems for dependent &indent. Source | e,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 19 | | 1-4 of article (12) | 1-12 of article (11) | Thevenin theorem | e,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 20 | | 1-4 of article (12) | 1-12 of article (11) | Norton theorem | f,g,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 21 | | 1-4 of article (12) | 1-12 of article (11) | Superposition theorem | h,i,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 22 | | 1-4 of article (12) | 1-12 of article (11) | Power calculations | H,I,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 23 | | 1-4 of article (12) | 1-12 of article (11) | Power factor corrections | H,i,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 24 | | 1-4 of article (12) | 1-12 of article (11) | Resonance circuits | j,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 25 | | 1-4 of article (12) | 1-12 of article (11) | Passive filters | j,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 26 | | 1-4 of article (12) | 1-12 of article (11) | Magnetic circuits | j,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 27 | | 1-4 of article (12) | 1-12 of article (11) | Hysteresis &eddy current losses. | k,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 28 | | 1-4 of article (12) | 1-12 of article (11) | Basic electromagnetic –self inductance. | k,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 29 | | 1-4 of article (12) | 1-12 of article (11) | Mutual inductance. | k,1,m,n,o.p,q,r | 4  3 the.  1 tut. | 30 |  |  |  |  | | --- | --- | --- | | ***15. Infrastructure*** | | | | **Textbook**  The book we used to teach fundamentals of Electrical circuits to first year students in the Electrical Engineering Department is *Fundamentals of Electric Circuits* by Charles K. Alexander & Mathew N.O. Sadiku (third edition).  **References**  we used references such as *Electric Circuits* (8th Edition) by James W. Nilson, *Introductory Circuit Analysis* by Boylestad, *Electrical Technology* by Hughes and *Introductions to Electric Circuits* (6th Edition) by R.C. Dorf & J. A. Svoboda, in addition to internet links related to the topics discussed in the book and class. | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER | | | * Available websites related to the subject. * Extracurricular activities. | Special requirements (include for example workshops, periodicals, IT software, websites) | | | * Field and scientific visits. * Extra lectures by foreign guest lecturers. | Community-based facilities  (include for example, guest  Lectures , internship , field studies) | | | ***16. Admissions*** | | | | EE107 Course | | Pre-requisites | | / | | Minimum number of students | | 100 | | Maximum number of students | | **1 INSTRUCTOR**  Lecturer (MSc.): Mohanad A. JOODI  Electrical Engineering Department  Collage of Engineering  University of Baghdad  Tel: 00964-7815590669  E-mail: [eng\_muhanad73@yahoo.com](mailto:eng_muhanad73@yahoo.com) | | ***17. Course Instructors*** |   . |