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| **Course Plan for Electrical Engineering/Communications and Computer (Bachelor Program)**  **No.: (20171)** |
| **Approved by Deans Council by decision (07/72/2016-2017) dated (30/8/2017)** |
| **)160) Credit Hours** |

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| **Goals and learning outcomes** | **No.** |
| **Apply the knowledge in communications and computer engineering fundamentals, mathematics, and computing to solve a wide range of technical problems.** | **PEO 1**  **SO** |
| An ability to apply knowledge of mathematics, science, and engineering. | (a) |
| An ability to design and conduct experiments, as well as to analyze and interpret data. | (b) |
| An ability to design a system, component, or process to meet desired needs. | (c) |
| An ability to identify, formulates, and solves engineering problems. | (e) |
| An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. | (k) |
| **Have the ability to interact with others as leaders and team members.** | **PEO 2**  **SO** |
| An ability to function on multi-disciplinary teams. | (d) |
| An ability to communicate effectively. | (g) |
| **Ability to continue their education in communications and computer or any other lifelong learning program.** | **PEO 3**  **SO** |
| The broad education necessary to understand the impact of engineering solutions in a global and societal context. | (h) |
| Recognition of the need for, and an ability to engage in life-long learning. | (i) |
| Knowledge of contemporary issues. | (j) |
| **Attain a high level of professionalism and ethical responsibilities.** | **PEO 4**  **SO** |
| An understanding of professional and ethical responsibility. | (f) |
| The broad education necessary to understand the impact of engineering solutions in a global and societal context. | (h) |
| An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. | (k) |

Note: PEO= Program Educational Objective, SO= Student Outcome

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| Advertisement Plan | Prerequisite  Co-requisite | Practical Hours | Theory Hours | Credit Hours | Course title | Course number | Student’s information | |
| Semester/year | passed | Registered |
| **First: University Requirements (27) Credit Hours** | | | | | | | | |
| 1. **Mandatory requirement (15 credit hour)** | | | | | | | | |
| 2/1 |  | 0 | 3 | 3 | Military Sciences | 0420101 |  |  |
| 1/1 | Remedial Arabic Language | 0 | 3 | 3 | Arabic Language (1) | 0420111 |  |  |
| 2/1 | Remedial English Language | 0 | 3 | 3 | English Language (1) | 0420121 |  |  |
| 1/1 |  | 0 | 3 | 3 | National Education | 0420151 |  |  |
| 1/1 |  | 0 | 3 | 3 | Life Skills | 0420171 |  |  |
| 1. **Electives (12 credit hours, minimum 3 credits from each field)** | | | | | | | | |
| **Field I. Humanitarian courses** | | | | | | | | |
| 1/2 |  | 0 | 3 | 3 | History of Jerusalem | 0420103 |  |  |
| 2/2 |  | 0 | 3 | 3 | Islamic Culture | 0420112 |  |  |
| 1/2 |  | 0 | 3 | 3 | Principles of Education | 0420131 |  |  |
| 2/2 |  | 2 | 2 | 3 | Sport and Health | 0420134 |  |  |
| 1/2 |  | 0 | 3 | 3 | Human Civilization | 0420142 |  |  |
| 2/2 |  |  | 3 | 3 | Introduction to Sociology | 0420152 |  |  |
| 2/2 |  | 0 | 3 | 3 | Innovation and Entrepreneurship in Business | 0501100 |  |  |
| 2/1 |  | 0 | 3 | 3 | Law in Our Life | 0601102 |  |  |
| **Field II. Scientific course** | | | | | | | | |
| 1/2 | Remedial Computer Skills | 0 | 3 | 3 | Information Technology and Society | 0120111 |  |  |
| 2/1 |  | 0 | 3 | 3 | Medicinal Plants | 0120153 |  |  |
| 2/1 |  | 0 | 3 | 3 | First Aid | 0301101 |  |  |
| 2/2 |  | 0 | 3 | 3 | Fundamental of Nutrition | 0301102 |  |  |
| 2/2 |  | 0 | 3 | 3 | Principles of Energy Science | 0906100 |  |  |

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| **Second: Faculty Requirements (26) credit hours** | | | | | | | | |
| Advertisement Plan | Prerequisite  Co-requisite | Practical Hours | Theory Hours | Credit Hours | Course title | Course number | Student’s information | |
| Semester/year | passed | Registered |
| 1/1 | Co. General Physics | 3 | 0 | 1 | General Physics Lab I | 0120132 |  |  |
| 1/1 | - | 3 | 1 | 2 | Engineering Workshops | 0911101 |  |  |
| 2/1 | General Physics I | 0 | 3 | 3 | Principles of Electrical Circuits | 0905111 |  |  |
| 2/1 | Remedial computer Skills (0120001) | 0 | 3 | 3 | Computer Engineering Applications | 0909101 |  |  |
| 2/1 | - | 6 | 0 | 3 | Engineering Drawing | 0911102 |  |  |
| 2/2 | English Language I | 0 | 2 | 2 | Technical Writing and Profession Ethics | 0908201 |  |  |
| 1/4 | 4th Year Level | 0 | 3 | 3 | Engineering Economy | 0909404 |  |  |
| 1/5 | Engineering Economy | 0 | 3 | 3 | Projects Management and Value Engineering | 0908461 |  |  |
| 1/1 | Co. General Physics | 3 | 0 | 1 | General Physics Lab I | 0120132 |  |  |
| **Third: Major requirements (107)credit hours** | | | | | | | | |
| 1. **Mandatory Major requirements (79) credit hours** | | | | | | | | |
| (2/1) | Calculus I | 0 | 3 | 3 | Discrete Structures | 0909141 |  |  |
| (2/1) | General Physics I | 0 | 3 | 3 | Applied Physics | 0909211 |  |  |
| (2/1) | Calculus I | 0 | 3 | 3 | Introduction to Linear Systems | 0909221 |  |  |
| (1/2) | Calculus I | 0 | 3 | 3 | Digital Logic Design | 0909242 |  |  |
| (2/2) | Principles of Electrical Circuits | 0 | 3 | 3 | Principles of Electronics | 0909214 |  |  |
| (2/2) | Co**-** Applied Physics | 3 | 0 | 1 | Applied Physics Lab. | 0909212 |  |  |
| (2/2) | Introduction to Linear Systems | 0 | 3 | 3 | Signals and Systems Analysis | 0909223 |  |  |
| (2/2) | Digital Logic Design | 3 | 0 | 1 | Digital Logic Design Lab. | 0909243 |  |  |
| (2/2) | Digital Logic Design | 0 | 3 | 3 | Computer Architecture and Special Processors | 0909246 |  |  |
| (2/2) | Co- Computer Organization and Special Processors | 3 | 0 | 1 | Computer Architecture & Organization Lab. | 0909247 |  |  |
| (1/3) | Principles of Electronics | 0 | 3 | 3 | Electronics Circuits | 0909316 |  |  |
| (1/3) | Advanced Electrical Circuits | 0 | 3 | 3 | Electromagnetics | 0909322 |  |  |
| (1/3) | Signals and Systems Analysis | 0 | 3 | 3 | Digital Signals Processing | 0909325 |  |  |
| (1/3) | Computer Application Engineering | 0 | 3 | 3 | Object Oriented Programming | 0909353 |  |  |
| (2/3) | Co**-** Object Oriented Programming | 3 | 0 | 1 | Object Oriented Programming Lab. | 0909356 |  |  |
| (2/3) | Principles of Electronics | 3 | 0 | 1 | Electronics Lab | 0909215 |  |  |
| (2/3) | Electronics Circuits | 0 | 3 | 3 | Digital Electronics | 0909317 |  |  |
| (2/3) | Signals and Systems Analysis | 0 | 3 | 3 | Probability and Random Signals Analysis | 0909324 |  |  |
| (2/3) | Probability and Signals Process | 0 | 3 | 3 | Analog Communications | 0909326 |  |  |
| (2/3) | Computer Organization and Special Processors | 0 | 3 | 3 | Operating Systems | 0909349 |  |  |
| Passing (90 ) Credit Hours | Passing (90 ) Credit Hours  (8 Weeks) | 9 | 0 | 3 | Engineering Training | 0909401 |  |  |
| (1/4) | Analog Communications | 3 | 0 | 1 | Analog Communications Lab | 0909427 |  |  |
| (1/4) | Analog Communications | 0 | 3 | 3 | Digital Communications | 0909428 |  |  |
| (1/4) | Digital Logic Design | 0 | 3 | 3 | Microprocessors Systems | 0909445 |  |  |
| (1/4) | Operating Systems | 0 | 3 | 3 | Computer Networks | 0909462 |  |  |
| (2/4) | Digital Communications  Computer Networks | 0 | 3 | 3 | Communications and Networks Systems | 0909432 |  |  |
| (2/4) | Co**-**Microprocessors Systems | 3 | 0 | 1 | Microprocessors Systems Lab | 0909446 |  |  |
| (2/4) | Computer Organization and Architecture | 3 | 2 | 3 | Embedded Systems | 0909447 |  |  |
| (2/4) | Computer Networks | 3 | 0 | 1 | Computer Networks Lab | 0909463 |  |  |
| (2/4) | Digital Electronics | 0 | 3 | 3 | Communications Electronics | 0909464 |  |  |
| (1/5) | Passing (120) Credit Hours | 3 | 0 | 1 | Graduation Project I | 0909501 |  |  |
| (1/5) | Digital Communications | 3 | 0 | 1 | Digital Communications Lab. | 0909533 |  |  |
| (1/5) | Co- Embedded Systems | 3 | 0 | 1 | Embedded Systems Lab. | 0909548 |  |  |
| (2/5) | Graduation Project I | 6 | 0 | 2 | Graduation Project II | 0909502 |  |  |
| 1. **Major supporting requirements (25) credit hours** | | | | | | | | |
| (2/1) | Calculus I | 0 | 3 | 3 | Calculus II for Engineering Students | 0101104 |  |  |
| (1/2) | Calculus II | 0 | 3 | 3 | Calculus III for Engineering Students | 0101205 |  |  |
| (1/2) | Calculus I | 0 | 3 | 3 | Ordinary Differential Equations | 0101273 |  |  |
| (2/2) | Principles of Electrical Circuits | 3 | 0 | 1 | Electrical Circuits Lab | 0905212 |  |  |
| (2/2) | Principles of Electrical Circuits | 0 | 3 | 3 | Advanced Electrical Circuits | 0905213 |  |  |
| (1/3) | Signals and Systems Analysis | 0 | 3 | 3 | Control Systems | 0905342 |  |  |
| (3/1) | Advanced Electrical Circuits | 0 | 3 | 3 | Electrical Machines | 0905331 |  |  |
| (1/4) | Principles of Electronics | 0 | 3 | 3 | Power Electronics | 0905364 |  |  |
| (1/5) | Calculus II for Engineering Students | 0 | 3 | 3 | Numerical Engineering Methods | 0911361 |  |  |
| (1/3) | Digital Logic Design | 0 | 3 | 3 | Embedded Systems | 0909447 |  |  |
| 1. **Major electives (3) credit hours** | | | | | | | | |
| (5) | 5th year level | 0 | 3 | 3 | Special Topics | 0909503 |  |  |
| (5) | Digital Communications | 0 | 3 | 3 | Wireless Communications | 0909529 |  |  |
| (5) | Electromagnetics | 0 | 3 | 3 | Fiber Optics Communications Systems | 0909534 |  |  |
| (5) | Digital signals Processing | 0 | 3 | 3 | Digital Image Processing | 0909535 |  |  |
| (5) | Object Oriented Programming | 0 | 3 | 3 | Data Base Systems | 0909549 |  |  |
| (5) | Probability and Random Signal Analysis | 0 | 3 | 3 | Machine Learning | 0909556 |  |  |
| **Fourth: free electives** **(0) Credit Hours**  None | | | | | | | | |

**Courses Given to Other Majors)**

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| **Type of requirement**  (University Requirements, Faculty Requirements, Supporting Requirements) | **Credit hours** | **Course title** | **Course number** |
| Faculty Requirements | Engineering Computer Applications | 3 | 0909101 |
| Supporting Requirements/Power and Control | Applied Physics | 3 | 0909211 |
| Supporting Requirements/Power and Control | Applied Physics Lab. | 1 | 0909212 |
| Supporting Requirements/Power and Control | Principles of Electronics | 3 | 0909214 |
| Supporting Requirements/Power and Control | Electronics Lab. | 1 | 0909261 |
| Supporting Requirements/Power and Control | Introduction to Linear Systems | 3 | 0909221 |
| Supporting Requirements/Power and Control | Signals and Systems Analysis | 3 | 0909223 |
| Supporting Requirements/Power and Control | Digital Logic Design | 3 | 0909242 |
| Supporting Requirements/Power and Control | Digital Logic Design Lab. | 1 | 0909243 |
| Supporting Requirements/Power and Control | Probability and Random Process | 3 | 0909324 |
| Supporting Requirements/Power and Control | Embedded Systems | 3 | 0909447 |
| Supporting Requirements/Civil Engineering and Infrastructure | Principles of Electrical Communications | 3 | 0909222 |
| Supporting Requirements/Civil Engineering and Infrastructure | Communications Networks and Electrical Wiring | 3 | 0909321 |
| Supporting Requirements/Civil Engineering and Infrastructure | Communications Networks and Electrical Wiring Lab. | 1 | 0909323 |
| Faculty Requirements | Engineering Economy | 3 | 0909404 |