**جامعــة الزيتونـــة الأردنيــة**
**Al-Zaytoonah University of Jordan**
**كلية العلوم وتكنولوجيا المعلومات**
**Faculty of Science and information Technology**

" عراقة وجودة"
"Tradition and Quality"

| Course Plan for Bachelor program - Course Plan Development and Updating Procedures/ Software Engineering Department | QF01/0407-3.0E |
|---|---|

| Course Plan for Software Engineering  (Bachelor  Program) No.:  (1/2018-2019) |
|---|
| Approved by Deans Council by decision (02/20/2018-2019 ) dated (06/05/2019) |
| (133) Credit Hours |

| No. | Goals and learning outcomes |
|---|---|
| Goal 1 | Provide the students with basic concepts principles and theories of software engineering. The student will be able to: |
| ILO 1.1 | Demonstrate an understanding of the key concepts, principles, and theories of software engineering. |
| ILO 1.2 | appreciate the role of software engineering in solving various problems of individuals, organizations and society |
| GOAL 2 | Improve communication skills and technical skills of students to develop high quality software. The student will be able to |
| ILO 2.1 | Function effectively on teams to develop various types of software |
| ILO 2.2 | Communicate effectively with a range of audiences. |
| ILO 2.3 | Create plans for software development projects to ensure that they are developed within  a specific time and cost. |
| GOAL 3 | Improve students' ability to develop and maintain different types of software. |
| ILO 3.1 | Analyze functional and non-functional requirements of different types of software. |
| ILO 3.2 | Design various components of the computer system effectively. |
| ILO 3.3 | Apply programming languages to implement different types of software. |
| ILO 3.4 | Recognize different techniques to maintain software. |
| ILO 3.5 | Develop applications software to solve problems of individuals, organizations and society. |
| GOAL 4 | Develop students' ability to measure software quality. |
| ILO 4.1 | Use different techniques to check how well the software meets functional requirements. |
| ILO 4.2 |  Apply different methods to measure quality requirements of software |

Note: G= Goal, ILO= Intended Learning Outcome
        Assign 3-7 ILOs for each goal

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| Student's information | | Course number | Course title | Credit Hours | Theory Hours | Practical Hours | Prerequisite Co-requisite | Advertisement Plan |
|---|---|---|---|---|---|---|---|---|
| Registered | passed | | | | | | | Semester/year |
| **First: University Requirements (27) Credit Hours** | | | | | | | | |
| **A. Mandatory requirement (15 credit hour)** | | | | | | | | |
| ☐ | ☐ | 0420000 | Community Service | 0 | | | | 1/2 |
| ☐ | ☐ | 0420101 | Military Sciences | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0420111 | Arabic Language (1) | 3 | 3 | 0 | Remedial Arabic Language | 1/1 |
| ☐ | ☐ | 0420121 | English Language (1) | 3 | 3 | 0 | Remedial English Language | 1/2 |
| ☐ | ☐ | 0420151 | National Education | 3 | 3 | 0 | | 1/1 |
| ☐ | ☐ | 0420171 | Life Skills | 3 | 3 | 0 | | 1/1 |
| **B. Electives (15 credit hours, minimum 3 credits from each field)** | | | | | | | | |
| **Field I. Humanitarian courses** | | | | | | | | |
| ☐ | ☐ | 0420103 | History of Jerusalem | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0420112 | Islamic Culture | 3 | 3 | 0 | | 2/2 |
| ☐ | ☐ | 0420131 | Principles of Education | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0420134 | Sport and Health | 3 | 2 | 2 | | 2/2 |
| ☐ | ☐ | 0420142 | Human Civilization | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0420152 | Introduction to Sociology | 3 | 3 | | | 2/2 |
| ☐ | ☐ | 0501100 | Innovation and Entrepreneurship in Business | 3 | 3 | 0 | | 2/2 |
| ☐ | ☐ | 0601102 | Law in Our Life | 3 | 3 | 0 | | 1/2 |
| **Field II. Scientific course** | | | | | | | | |
| ☐ | ☐ | 0120111 | Information Technology and Society | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0120153 | Medicinal Plants | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0301101 | First Aid | 3 | 3 | 0 | | 1/2 |
| ☐ | ☐ | 0301102 | Fundamental of Nutrition | 3 | 3 | 0 | | 2/2 |

| Student's information | | Course number | Course title | Credit Hours | Theory Hours | Practical Hours | Prerequisite Co-requisite | Advertisement Plan |
|---|---|---|---|---|---|---|---|---|
| Registered | passed | | | | | | | Semester/year |
| **Second: Faculty Requirements (21) credit hours** | | | | | | | | |
| ☐ | ☐ | 0113130 | Introduction to Information Technology | 3 | 3 | 0 | *Remedial computer skills | 1/1 |
| ☐ | ☐ | 0101110 | Principles of Mathematics and Statistics | 3 | 3 | 0 | | 1/1 |
| ☐ | ☐ | 0112120 | Principles of Programming | 3 | 2 | 2 | Introduction to Information Technology | 1/2 |
| ☐ | ☐ | 0112130 | Professional Skills for Scientific Faculties | 3 | 3 | 0 | | 1/2 |

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| | | Code | Course | Cr | Th | Pr | Prerequisite | Sem |
|---|---|---|---|---|---|---|---|---|
| ☐ | ☐ | 0112110 | Discrete Mathematics | 3 | 3 | 0 | Introduction to Information Technology | 1/1 |
| ☐ | ☐ | 0112220 | Object Oriented Programming | 3 | 2 | 2 | Principles of Programming | 2/1 |
| ☐ | ☐ | 0113220 | Web Design | 3 | 2 | 2 | Principles of Programming | 2/2 |

**Third: Major requirements (82) credit hours**

**A. Mandatory Major requirements ( 33 ) credit hours**

| | | Code | Course | Cr | Th | Pr | Prerequisite | Sem |
|---|---|---|---|---|---|---|---|---|
| ☐ | ☐ | 0122141 | Computer Networks | 3 | 3 | 0 | Introduction to Information Technology | 2/1 |
| ☐ | ☐ | 0112212 | Data Structure | 3 | 2 | 2 | Object Oriented Programming | 2/2 |
| ☐ | ☐ | 0112333 | Operating Systems | 3 | 3 | 0 | Digital Logic Design | 3/1 |
| ☐ | ☐ | 0112222 | Visual Programming | 3 | 2 | 2 | Object Oriented Programming | 2/2 |
| ☐ | ☐ | 0112313 | Digital Logic Design | 3 | 3 | 0 | Discrete Mathematics | 1/2 |
| ☐ | ☐ | 0112313 | Algorithms | 3 | 3 | 0 | Data Structure | 3/1 |
| ☐ | ☐ | 0113324 | Web Applications Programing | 3 | 2 | 2 | Web Design | 3/2 |
| ☐ | ☐ | 0114332 | Computer Architecture | 3 | 3 | 0 | Digital Logic Design | 3/1 |
| ☐ | ☐ | 0113241 | Database | 3 | 2 | 2 | Data Structure | 3/1 |
| ☐ | ☐ | 0113342 | Systems Analysis and Design | 3 | 2 | 2 | Software architecture | 2/2 |
| ☐ | ☐ | 0113325 | Database management system | 3 | 2 | 2 | Database | 3/2 |

**B. Mandatory Minor Requirements (34) Credit Hours**

| | | Code | Course | Cr | Th | Pr | Prerequisite | Sem |
|---|---|---|---|---|---|---|---|---|
| ☐ | ☐ | 0114151 | Software Engineering Principles | 3 | 3 | 0 | *Remedial computer skills | 1/1 |
| ☐ | ☐ | 0114152 | Software specification and design | 3 | 3 | 0 | Software Engineering Principles | 1/2 |
| ☐ | ☐ | 0114453 | Software testing | 3 | 2 | 2 | Systems Analysis and Design | 3/2 |
| ☐ | ☐ | 0114354 | Software architecture | 3 | 3 | 0 | Software specification and design | 2/1 |
| ☐ | ☐ | 0114455 | Software development and documentation | 3 | 2 | 2 | Systems Analysis and Design | 3/1 |
| ☐ | ☐ | 0114456 | Software project management | 3 | 2 | 2 | Systems Analysis and Design | 4/1 |
| ☐ | ☐ | 0114357 | Software economics | 3 | 3 | 0 | Software specification | 4/1 |

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| | | | | | | | and design | |
|---|---|---|---|---|---|---|---|---|
| ☐ | ☐ | 0114558 | Software quality management | 3 | 3 | 0 | Software testing | 4/1 |
| ☐ | ☐ | 0114381 | Human computer interaction | 3 | 3 | 0 | Software Engineering Principles | 3/2 |
| ☐ | ☐ | 0114471 | Software documentation techniques | 1 | 1 | 0 | Software development and documentation | 4/1 |
| ☐ | ☐ | 0114472 | Final Project | 3 | 0 | 6 | Department Approval | 4/2 |
| **C.** | **Major supporting requirements (6) credit hours** | | | | | | | |
| ☐ | ☐ | 0101221 | Linear Algebra 1 | 3 | 3 | 0 | Principles of Mathematics and Statistics | 2/1 |
| ☐ | ☐ | 0101272 | Numerical Analysis 1 | 3 | 3 | 0 | Principles of Mathematics and Statistics | 4/1 |
| **D.** | **Major electives (9) credit hours** | | | | | | | |
| ☐ | ☐ | 0114459 | Software analysis and modelling | 3 | 3 | 0 | Software architecture | 4/1 |
| ☐ | ☐ | 0114491 | Special topics in SE( 1) | 3 | 2 | 2 | Database | 3/1 |
| ☐ | ☐ | 0114492 | Data Security | 3 | 3 | 0 | Algorithms | 3/2 |
| ☐ | ☐ | 0114493 | Special topics in SE( 2) | 3 | 2 | 2 | Database | 4/2 |
| ☐ | ☐ | 0114485 | Enterprise resource planning (ERP) | 3 | 3 | 0 | Database | 4/1 |
| ☐ | ☐ | 0114485 | Software configuration management | 3 | 3 | 0 | Systems Analysis and Design | 4/1 |
| ☐ | ☐ | 0114487 | Artificial intelligence | 3 | 3 | 0 | Introduction to Information Technology | 2/1 |
| ☐ | ☐ | 0114488 | E-Business development | 3 | 3 | 2 | Visual Programming | 3/1 |
| ☐ | ☐ | 0114489 | Software maintenance and re-engineering | 3 | 2 | 0 | Software development and documentation | 4/2 |

**Fourth: free electives (3) Credit Hours**
(Student may choose any course from any course plan at the university unless the student had passed it previously)

❖ Co-requisite
**Courses Given to Other Majors)**

| Course number | Course title | Credit hours | Type of requirement (University Requirements, Faculty Requirements, Supporting Requirements) |
|---|---|---|---|
| 0114151 | 3 | Software Engineering Principles | Mandatory Major requirements for Computer Information Technology/Computer Information Technology, Supporting Requirements for computer science /computer science |