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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for** **IT 119 PROGRAMMING FUNDAMENTALS** |

|  |  |
| --- | --- |
| **Course Name:** | PROGRAMMING FUNDAMENTALS |
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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 119 | 2 | 2 | 3 | 2 | 4 |  |

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| **Name of Lecturer(s)-Academic Title:** | Alaa Ghazi - MSc |
| **Teaching Assistant:** | Mohammad Kamal |
| **Course Language:** | English |
| **Course Type:** | Main |
| **Office Hours** | Thursday after 14:00  |
| **Contact:** | Email:alaa.ghazi@ishik.edu.iq Tel:-  |
| **Teacher's academic profile:** | BSc Degree in Software Engineering. MSc Degree in Software Engineering. IT Department Head.  |
| **Course Objectives:** | This is a foundation course on programming. The student will learn problem solving, algorithms, and programming in object oriented programming language C++. |
| **Course Description (Course overview):** | Students will learn essential programming concepts, transferring the real basic problems in to flow charts and C++ programming language syntax. Also, they will learn how to write simple programs by using control structures, operands and arrays. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 3 | 25-29/3/2018 | Introduction to Computers and Programming |
| **2** | 3 | 1-5/4/2018 | Algorithms |
|  |  |  |  |
| **3** | 3 | 8-12/4/2018 | C++ Basics |
| **4** | 3 | 15-19/4/2018 | Expressions and Interactivity |
|  |  |  |  |
| **5** | 3 | 22-26/4/2018 | Making Decisions |
| **6** | 3 | 29/4-3/5/2018 | Midterm Exam |
|  |  |  |  |
| **7** | 3 | 6-10/5/2018 | Loops |
| **8** | 3 | 13-17/5/2018 | Functions |
|  |  |  |  |
| **9** | 3 | 20-24/5/2018 | One Dimension Arrays |
| **10** | 3 | 27-31/5/2018 | Review |
|  |  |  |  |
| **11** | 3 | 3-7/6/2018 | Final Exam |
| **12** | 3 | 10-14/6/2018 | Final Exam |
|  |  |  |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

|  |  |
| --- | --- |
|  |  |
| **1** | Design solutions for introductory level problems using appropriate design methodology incorporating elementary programming constructs |
| **2** | Create algorithms, code, document, debug, and test introductory level C++ programs. |
| **3** | Read, analyze and explain introductory level C++ programs. |
| **4** | Apply debugging techniques |
| **5** | Read Language reference. |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

|  |  |  |
| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | A |
| **2** | An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs | A |
| **3** | An ability to function effectively on teams to accomplish a common goal | P |
| **4** | An understanding of professional, ethical, legal, security, social, and economic issues and responsibilities |  |
| **5** | An ability to analyze the local and global impact of computing on individuals, organizations, and society |  |
| **6** | An ability to use current techniques, skills, and tools necessary for computing practice | P |
| **7** | An ability to use and apply current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies | P |
| **8** | An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems | P |
| **9** | An ability to effectively integrate IT-based solutions into the user environment | I |
| **10** | An ability apply problem solving skills, core IT concepts, best practices and standards to information technologies | P |
| **11** | An ability to identify and evaluate organizational requirements and current and emerging technologies |  |
| **12** | An ability to select, design, integrate and administer IT-based solutions into the organizational environment |  |

 |
| **Prerequisites (Course Reading List and References):** | NO |
| **Student's obligation (Special Requirements):** | NO |
| **Weekly Laboratory/Practice Plan:** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topics** |
| 1 | 2 | 25-29/3/2018 | LAB 01 – Scratch - Step by Step |
| 2 | 2 | 1-5/4/2018 | LAB02 – Scratch – Decisions and Loops |
|  |  |  |  |
| 3 | 2 | 8-12/4/2018 | LAB03 - C++ Basics |
| 4 | 2 | 15-19/4/2018 | LAB04 - Expressions, Input, and Output |
|  |  |  |  |
| 5 | 2 | 22-26/4/2018 | LAB05 - Conditional Statements |
| 6 | 2 | 29/4-3/5/2018 | Midterm Exam |
|  |  |  |  |
| 7 | 2 | 6-10/5/2018 | LAB06 - Looping Statements |
| 8 | 2 | 13-17/5/2018 | LAB07 - Functions |
|  |  |  |  |
| 9 | 2 | 20-24/5/2018 | LAB08 - Arrays |
| 10 | 2 | 27-31/5/2018 | LABs Review |
|  |  |  |  |
| 11 | 2 | 3-7/6/2018 | Final Exam |
| 12 | 2 | 10-14/6/2018 | Final Exam |
|  |  |  |  |

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| **Course Book/Textbook:** | Starting Out with C++ Early Objects 7th Edition |
| **Other Course Materials/References:** | The Complete Reference C++ 3rd Edition |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Excersises, Assignments |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Quiz | 2 | 5 |
| Midterm Exam(s) | 1 | 20 |
| Laboratory | 1 | 20 |
| Lab/Practical Exam(s) | 1 | 10 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Fill in the Blanks, Multiple Choices, Matching |  |  |

 |
| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) |  |  | 0 |
| Hours for off-the-classroom study (Pre-study, practice) |  |  | 0 |
| Assignments Mid-terms |  |  | 0 |
| Final examination |  |  | 0 |
| Other |  |  | 0 |
| **Total Workload** | **0** |
| **ECTS Credit (Total workload/25)** | **0** |

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**Peer review**

|  |  |  |
| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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