اعتماد
NCAAA
T4
2020

# Course Specifications

| Course Title: | Computer Programming (1) |
|---|---|
| Course Code: | 501220-3 |
| Program: | Bachelor in Computer Science |
| Department: | Department of Computer Science |
| College: | College of Computers and Information Technology |
| Institution: | Taif University |

## Table of Contents

# A. Course Identification

| | |
|---|---|
| **1. Credit hours:** | |
| **2. Course type** | |
| **a.** University ☐ College **X** Department ☐ Others ☐ | |
| **b.** Required **X** Elective ☐ | |
| **3. Level/year at which this course is offered:** 1st Level/ 2nd Year | |
| **4. Pre-requisites for this course** (if any)**: None** | |
| **5. Co-requisites for this course** (if any)**: None** | |

## 6. Mode of Instruction (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1 | Traditional classroom | 4 | 50% |
| 2 | Blended | 0 | 0 |
| 3 | E-learning | 1 | 12.5% |
| 4 | Distance learning | 0 | 0 |
| 5 | Other | 3 | 37.5% |

## 7. Contact Hours (based on academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1 | Lecture | 40 |
| 2 | Laboratory/Studio | 30 |
| 3 | Tutorial | 10 |
| 4 | Others (specify) | |
| | Total | 80 |

# B. Course Objectives and Learning Outcomes

| |
|---|
| **1. Course Description** |
| Introduce the fundamental concepts of programming and problem-solving techniques. Topics include data types, control structures, arrays and the mechanics of running, testing, and debugging. |

| |
|---|
| **2. Course Main Objective** |
| Students at the end of this course are able to: <ul><li>Develop problem solving and algorithm development skills</li><li>Develop understanding of fundamental concepts in computer programming</li><li>Develop skills to write programs using control structures and loops</li></ul> |

**Course Specifications**

## 3. Course Learning Outcomes

| | CLOs | Aligned PLOs |
|---|---|---|
| 1 | **Knowledge and Understanding** | |
| 1.1 | Specify basic terminologies used in computer programming | K1 |
| 1... | | |
| **2** | **Skills :** | |
| 2.1 | Write, compile and debug programs written in C++ language | S1 |
| 2.2 | Use different data types in a computer program | S1 |
| 2.3 | Design programs involving decision structures and loops | S2 |
| 2... | | |
| **3** | **Values:** | |
| 3.1 | | |
| 3... | | |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | Overview of Computers and Programming Languages | 5 |
| 2 | Introduce basic components of a C++ program, including special symbols, and identifiers | 10 |
| 3 | Explore simple data types | 5 |
| 4 | Introduce arithmetic operators and examine how a program evaluates arithmetic expressions | 10 |
| 5 | Introduce input and output statements | 10 |
| 6 | Write complete C++ programs that use the introduced topics | 10 |
| 7 | Control Structures 1 : Decisions | 10 |
| 8 | Control Structures 2 : Loops | 10 |
| 9 | Arrays and Strings | 10 |
| **Total** | | 80 |

## D. Teaching and Assessment

**1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods**

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| **1.0** | **Knowledge and Understanding** | | |
| 1.1 | Understand the basic terminology used in computer programming | Lectures Labs Project | **Direct Assessment Tool** Quizzes / Homework/Project/ Exams **Indirect Assessment Tool** Course Exit Survey |
| **2.0** | **Skills** | | |
| 2.1 | Write, compile and debug programs written in C++ language | Lectures Labs | **Direct Assessment Tool** |

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| | | | Quizzes / Homework/ Exams<br>**Indirect Assessment Tool**<br>Course Exit Survey |
| 2.2 | Use different data types in a computer program | Lectures<br>Labs | **Direct Assessment Tool**<br>Quizzes / Homework/ Exams<br>**Indirect Assessment Tool**<br>Course Exit Survey |
| 2.3 | Design programs involving decision structures and loops | Lectures<br>Labs | **Direct Assessment Tool**<br>Quizzes / Homework/ Exams<br>**Indirect Assessment Tool**<br>Course Exit Survey |
| **3.0** | **Values** | | |
| 3.1 | | | |
| 3.2 | | | |
| … | | | |

## 2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|---|---|---|
| 1 | HomeWorks/Student Participation-Attendance | Every Week | 10% |
| 2 | Quizzes | Week 4 & 8 | 10% |
| 3 | Final Labs Exam | Week 11 | 10% |
| 4 | Mid-Term | Week 6 | 20% |
| 5 | Final Examination | Week 12 | 50% |
| 6 | | | |

**Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

Appropriate student advising is provided to support the student during the whole semester. It helps the student to build a close relationship with his/her advisor and to provide student motivation and involvement with the institution.

Additional counseling is provided by course directors, who provide students with academic reinforcement and assistance and refer "at risk" students to the Vice Dean for Academic Affairs and the Vice Dean for female section. Some methods to implement advising is by:

- Consultation by appointment (as needed)
- Through emails
- Through BlackBoard Learn

## F. Learning Resources and Facilities

### 1.Learning Resources

| | |
|---|---|
| **Required Textbooks** | C++ Programming: From Problem Analysis to Program, D S Malik, CEGAGE Learning, 2011 |
| **Essential References Materials** | C++ how to Program, Harvey M. Deitel and Paul J. Deitel, Prentice Hall, 2008 |
| **Electronic Materials** | |
| **Other Learning Materials** | |

### 2. Facilities Required

| Item | Resources |
|---|---|
| **Accommodation** (Classrooms, laboratories, demonstration rooms/labs, etc.) | • Classroom with 20-30 chairs  Lab with 15 PCs and required software tools installed (Dev c++) |
| **Technology Resources** (AV, data show, Smart Board, software, etc.) | • Video projector / data show/White board |
| **Other Resources** (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | |

## G. Course Quality Evaluation

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|---|---|---|
| Effectiveness of Teaching | Students | Students' surveys and Student's course evaluation |
| Improvement of Teaching | Course Coordinator | deficiencies based on the student Evaluation, faculty input, course file, and program assessment |

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|---|---|---|
| Verifying Standards of Student Achievement | Curriculum Committee | • Review CAF (Course assessment file)<br>• Alumni surveys.<br>Periodic exchange and remarking of tests or a sample of assignments with staff at another |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

| Council / Committee | CS council |
|---|---|
| Reference No. | Meeting #12 |
| Date | 23-10-1443 |