CS1102: INTRODUCTION TO COMPUTER STUDIES

Effective Term
Semester A 2023/24

Part I Course Overview

Course Title
Introduction to Computer Studies

Subject Code
CS - Computer Science
Course Number
1102

Academic Unit
Computer Science (CS)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
CS1302 Introduction to Computer Programming

Part II Course Details

Abstract

This course aims to provide an introduction to computing concepts, skills and the technologies behind the Internet. Students are introduced to software tools, web content scripting and basic computer programming. No prior programming or computer science experience is required.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the basic principles of computer systems, networks, Internet and information security.		x		
2	Inquire and evaluate the social, ethical, and safety issues of emerging technologies and innovations.		x	x	
3	Demonstrate the use of software tools and the ability to write simple programs using a scripting language.		x	x	x
4	Apply basic programming concepts to develop simple computer programs.			x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures/ Demonstrations	The basic principles of computer systems, networks, Internet and information security will be introduced. Social, ethical, and safety issues of emerging technologies and innovations will be presented. The basic programming concepts will be explained. Online resources will also be given for out-of-classroom reading and learning.	1, 2, 3, 4	3 hours per week

2	Labs	Labs will be held in "terminal rooms", in which concepts and operations presented in lectures will be demonstrated and exercised. Additional tasks will also be given for self practice.	2, 3, 4	1 hour per week
3	Project	This project will give students a hands-on experience to discover and comprehend a particular computer topic. It will also give students an opportunity to demonstrate their abilities of using productivity software tools to create the presentation slides and report.	1, 2	After class
4	Exam	The exam will assess students' understanding of computer systems, networks, the Internet, and information security. It will also test students' ability to analyze and solve problems leveraging programming.	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks
1	Lab exercises	3, 4	5	
2	Online homework	1, 2, 3	5	
3	Project	1, 2	10	
4	Midterm test	1, 2, 3, 4	20	

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2

Additional Information for ATs

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

Assessment Rubrics (AR)

Assessment Task

1. Project

Criterion
1.1 Study for a particular topic of computer technology
1.2 Presentation of findings for the topic

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
2. Lab

Criterion
2.1 Demonstration of independent problem-solving ability

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
3. Online homework

Criterion
3.1 Ability to analyze emerging technologies and innovations
3.2 Capacity to understand programs written with scripting language

Excellent (A+, A, A-)
High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

4. Midterm

Criterion

4.1 Ability to demonstrate the basic computing principles taught in the lectures
4.2 Capacity to apply basic programming concepts

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

5. Exam

Criterion

5.1 Ability to demonstrate the basic computing principles taught in the lectures
5.2 Capacity to write simple programs

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)
Not even reaching marginal levels

Part III Other Information

Keyword Syllabus
· Logical operations
· Binary arithmetic
· Basic operations of computer, data, CPU, memory, bus, IO, peripherals
· Programming concepts – instructions, programs, need for high-level language, compilers, interpreters
· Basic data types (integers, Boolean, characters and strings)
· Variables, expressions, and operations
· Compound statements and control structures
· Functions and parameters
· Operating systems – Unix, Windows
· File system
· End-user computing - word processing, spread sheet, presentation tool
· Databases
· Data communication - switches, networks, LANs, WANs, routers
· Internet – internet protocol, internet applications, email, file transfer, web browser, web server, web searching, basic html/css
· Concepts of client-side and server-side scripting
· Digital media, multimedia software tools
· Basic computer security, virus, filtering and scanning tools

Reading List

Compulsory Readings

	Title
1	Timothy J. O'Leary, Daniel A. O'Leary and Linda I. O'Leary (2023). Computing Essentials 2023, McGraw Hill Education.

Additional Readings

	Title
1	Nil