# CS1102: INTRODUCTION TO COMPUTER STUDIES

**Effective Term**
Semester A 2024/25

## 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 Computing (CC)

**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 real-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.

**Learning and Teaching Activities (LTAs)**

| | LTAs | Brief Description | CILO No. | Hours/week (if applicable) |
|---|---|---|---|---|
| 1 | Lectures/ Demonstrations | Students will learn to describe and explain 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 | Students will join lab sessions to be held in "terminal rooms", in which concepts and operations presented in lectures will be demonstrated and exercised. They will be given additional tasks for self practice. | 2, 3, 4 | 1 hour per week |
| 3 | Project | Students will have a hands-on experience to discover and comprehend a particular computer topic. They will also have an opportunity to demonstrate their abilities of using productivity software tools to create the presentation slides and report. | 1, 2 | After class |
| 4 | Exam | Students will be assessed on their understanding of computer systems, networks, the Internet, and information security. They will also be tested the ability to analyze and solve problems leveraging programming. | 1, 2, 3, 4 | |

**Assessment Tasks / Activities (ATs)**

| | ATs | CILO No. | Weighting (%) | Remarks (e.g. Parameter for GenAI use) |
|---|---|---|---|---|
| 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

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**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

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**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

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**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

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**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

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# 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 |