

# ICT133 Structured Programming

**Level:** 1

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY SEMESTER

## Synopsis:

This course introduces how humans can instruct computers to perform tasks and computations by writing programs using a programming language. Students will learn the structure of a program and how to write statements that contain constructs such as variables, expressions, selection and iteration to express the computation logic. Students will also learn how to use the Input/Output (I/O) library of a programming language to read from and write to files on computer disks for storage and other peripheral devices for display. Data structures to keep information in the working memory of the computer, including one called an object, will also be presented with the explanation of how they facilitate the organization of information and computation.

## Topics:

- Reasons for writing programs and what can go wrong
- Introduction to programming languages
- Introduction to Integrated Development Environment (IDE)
- Sequence - variables, expressions and statements
- Conditional execution - selection and iteration
- Functions and why functions
- I/O and Files
- Strings
- Lists
- Dictionaries
- Tuples
- Introduction to Objects and why objects

## Textbooks:

Portland, Oregon: Python Programming: An Introduction to Computer Science 3rd Edition 2017  
Franklin, Beedle & Associates Inc.  
ISBN-13: 9781590282755

Portland, Oregon: Python Programming: An Introduction to Computer Science 3rd Edition 2017  
Franklin, Beedle & Associates Inc.  
ISBN-13: 9781590282755-AA

**Learning Outcome:**

- Describe the building blocks of computers and programs
- Express a sequence of statements based on computational logic
- Apply data structures to store and process information
- Employ structured programming principles to develop a program
- Develop an application to address practical requirements
- Solve computational problems using structured programming

**Assessment Strategies:**

<b>Continuous Assessment Component</b>	<b>Weightage (%)</b>
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
QUIZ	6
TUTOR-MARKED ASSIGNMENT	18
<b>Sub-Total</b>	<b>30</b>

<b>Examinable Component</b>	<b>Weightage (%)</b>
ECA	70
<b>Sub-Total</b>	<b>70</b>

**Weightage Total** **100**