

1. **Fundamentals of Information and Communication Technologies**

Course Code: CS-100	Credit Hours: 2-1
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Course Description

This is an introductory course on Information and Communication Technologies (ICT). The course will cover some basic concepts essential to lay the foundations for further studies in Computer Science. Further, the course introduces the fundamental concepts underlying modern computer programming. A systematic approach is used to teach students how to write programs in Python language that solve well specified problems.

Text Book:

1. "Introduction to Computers", Peter Norton, 7th Edition, 2013, McGraw-Hill.
2. Python Basics: A Practical Introduction to Python 3, 4th Edition, David Amos, Fletcher Heisler, and Joanna Jablonski

Reference Book:

1. "Computing Essentials", Timothy O'Leary and Linda O'Leary, 2010, McGraw-Hill.

Prerequisites

None

ASSESSMENT SYSTEM FOR THEORY

Quizzes	10%
Assignments	10%
Mid Terms	30%
ESE	50%

ASSESSMENT SYSTEM FOR LAB

Quizzes	10%-15%
Assignments	5% - 10%
Lab Work and Report	70-80%
Lab ESE/Viva	20-30%

Teaching Plan

Week No	Topics	Learning Outcomes
1	Introduction	Introducing computer systems and computer components
2-8	Programming Fundamentals	Key programming constructs such as variables, expressions and data types in Python. Operators, Arithmetic and Logical, decision making constructs, and loops
9	MID TERM IN WEEK 9	
10-17	Modular Programming	Functions, strings as parameters, regular expressions in Python and their usage within functions, lambda functions, lists, data frames and series, sorting, searching and other applications of lists. Working with text and Excel files.
18	FINAL TERM IN WEEK 18	

Practical:

Experiment No	Description
1	Computer Hardware
2	Microsoft Word - Part I (& Reading: Ch 10A)
3	Microsoft Power Point
4	Variables, Expressions, Input, Output
5	Expressions, Input, Output and Data Type Conversions
6	Math's operations
7	Decision Making
8	Loops
9	MID TERM IN WEEK 9
10	Loops
11	Functions
12	String
13	Lists/ searching and sorting

14	Lambda functions and map function
15	Open-Ended Lab
16	Open-Ended Lab
17	Final Lab
18	FINAL TERM IN WEEK 18