**Course Title:** Computer Programming

**Course Code:** ECEg1052

**Course ECTS:** 5

**Target Group:** Engineering and Technology (1A)

**Academic Year:** 2012(II)

**Lecture Hr.** : Thursday (2:30 – 4:30)

**Laboratory Hr.**

EnTc-G1: Thursday (7:30 – 10:30)

EnTc-G2: Friday (7:30 – 10:30)

Consultation Hr. Friday 2:30 – 6:30

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1. **Course Description**

Introduction to programming , software development life cycle process, and Algorithm Development ; Basics of C++ ; general concepts on program control struceture; function in c++ ; Compound data types in C++ i.e Array, two dimensional Array, structure , pointer;file stream and also OOP Concepts in C++.

1. **Course Goals or Learning Outcome:**

* Describe the problem solving process as applied in programming
* Describe the basics of C++ programming general Syntax and Sematic
* Describe and know basic operation in C++
* Implement the program in flow control
* Describe and know object oriented approach in C++,Know the basic Compound data types i.e. array, structure, pointer, string
* Describe and know basic operation and manipulation performed in Compound data types
* Know files and operation using C++.Know and write user defined namespace and to know to Handle C++ programming Exception

1. **Prerequisites: NONE**
2. **Expectations:**

Students are expected to attend all lectures and laboratory sessions with serious discipline and complete the required assessments. Thus, intensive reading of course texts and frequent practice of laboratory activities are expected from students. Students are strongly encouraged to collaborate with one another in studying the textbook and the lecture material, while they are not permitted to collaborate on exams.

1. **Summary of Assessment Methods:**

* Continuous Assessment (50%):
  + Mid Exam (30%)
  + Lab Work (5%)
  + Project (10%)
  + Assignment (5%)
* Final Exam (50%)

1. **Reference Books/Required Texts**

* **Ref 1:** C++ How to program 8th Edition.Deitel
* **Ref 2:** Object Oriented Programming in C++.Daan CZajkowski.
* **Ref 3:** Pearson.Problem.Solving.with.C++.7th.Ed.Walter.Savitch.2009
* **Ref 4** : C++ A Beginner's Guide 2nd Edition (2003)
* **Ref 5**: <http://www.cppforschool.com/>
* **Ref 6**[: https://www.javatpoint.com/cpp-tutorial](:%20https:/www.javatpoint.com/cpp-tutorial)

# Course Contents

# Chapter-1: Introduction to Computer Programming

## Introduction to Programming

## What is Programming Language?

## Skills to be a programmer

## Generation of Programming Language?

## Types of Programming Paradigm

## Machine Language, Assembly Language, High level Language

## Programming and Problem Solving technique

### System Development life cycle (SDLC)

### Algorithm Development and Representation

## Compiler and Interpreters

# Chapter-2: Basics in C++ programming

## Introduction to C++ Program

## Structure/anatomy of C++ programming

## Basic Elements of C++ Programming

## Operators

## Error and Debug in C++

# Chapter-3: Program Control Statements

## Introduction

## Selection statements

## Repetition statement

## Loop Control statements

# Chapter-4: Modular Programming (Function)

## Introduction to Function

## Scope of variable

## Function Arguments

## Way of passing arguments

## Return values

## Default parameters

## Inline functions

## Recursive Function

# Chapter-5: Compound data Type

## Array

## Pointer

## String

## Structure

# Chapter-6: File Management

## Introduction to files and stream

## Text and Binary Files

### Overview of file

### Text file processing

### Binary file Processing

## Random Access Files

## Files as an arguments to function

# Chapter-7: C++ Namespace and Exception

## Namespace

## Exception

# Chapter-8: Object oriented Programming

## Introduction to OOP Concepts

## Introduction to Class and Objects

## Constructor and Destructor

## Separate Header and Implementation files

## Basic concepts of OOP

### Polymorphism

### Encapsulation

### Inheritance and aggregation

### Abstraction and Interface

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