HIGHER TECHNOLOGICAL INSTITUTE

Department of Civil Engineering

Course specifications

Programme on which the course is given	BSc in **Civil** Engineering
Compulsory or Elective element of programmes	Compulsory
Department offering the programme	**Civil** Engineering Department
Department offering the course	**Civil** Engineering Department
Academic Level	Diploma Stage
Date of specification approval	2015

A- Basic Information

Title: Computer Programming **Code** : CSC 101

Credit Hours: 2 **Lecture** : 2

Tutorial: - **Practical**: 2 **Total** : 4

Prerequisite: CSC 001

B- Professional Information

1-Overall aims of course

To provide sufficient knowledge of the computer programming to solve civil engineering problems.

2- Intended learning outcomes of course (ILOs)

a. Knowledge and understanding :

a1. Identify problem analysis and algorithm

a2. Describe the flow chart diagram

a3. Distinguish between the flow chart and the computer program

a4. Identify all dimension arrays

a5. Identify functions and subroutines

b. Intellectual skills

b1. Program execution and verification

b2. Programming a certain problem which the student is interested in.

c. professional and practical skills

c1. Use One-Dimensional Arrays for solving engineering problems

c2. Use multi-Dimensional Arrays for solving engineering problems

c3. Use Character Data for solving engineering problems

c4. Use File Processing for solving engineering problems

c5. Use Functions and Subroutines for solving engineering problems

3-Contents

week	Topic	No. of hours	Lecture	Tutorial	Practical
1	Introduction and advantages and disadvantages of the Fortran program.	**4**	**2**	**-**	**2**
2	How to install the Fortran compiler program, a small program to demonstrate how to save and run a program.	**4**	**2**	**-**	**2**
3	Data types, variables, and operators, declaration of the variables.	**4**	**2**	**-**	**2**
4	Conditional statements: If-then, If-then-else, Select Case.	**4**	**2**	**-**	**2**
5	Input.	**4**	**2**	**-**	**2**
6	Output.	**4**	**2**	**-**	**2**
7	Revision & Semester Mid Term Exam	**4**	**2 (Exam)**	**-**	**2**
8	One-dimensional Arrays and how to declare arrays.	**4**	**2**	**-**	**2**
9	Multi-dimensional Arrays and how to declare arrays.	**4**	**2**	**-**	**2**
10	Character data	**4**	**2**	**-**	**2**
11	File processing	**4**	**2**	**-**	**2**
12	Functions	**4**	**2**	**-**	**2**
13	Subroutines	**4**	**2**	**-**	**2**
14	Revision & Final practical examination	**4**	**2**	**-**	**2 (Exam)**
15	Final term exam	**4**	**(Exam)**		

4-Teaching and learning methods

1. 26 one-hour lectures
2. 26 one –hour laboratory training
3. 2 one-hour class tests
4. Two 2-hour examination

5-Student assessment methods

1. Semester mid term exam to asses: the first 6 weeks knowledge
2. Written Quizzes to asses: programming concepts
3. Sheets to asses: write programs
4. Practical Quizzes to asses: running programs
5. Final practical examination and final written examination

Assessment schedule

1. Semester mid term exam	week no. 7
2. Written Quizzes	week (s) 3 and 8
3. Sheets	week (s) every week
4. Practical Quizzes	week (s) 3 and 8

Weighting of assessments

Semester mid term exam.	30%
Final term exam.	30%
Practical Exam	10%
Semester Work	30%
Total	100%

6-List of references

1-Course notes

1. Available (handed to students part by part).

2- References

1. Fortran 77 for Engineers and Scientists, by Larry Nyhoff and Sanford Leestma. Publisher: Macmillan Publishing Company

7-Facilities required for teaching and learning

1. Appropriate teaching accommodation including teaching aids.
2. Computer labs.

Course coordinator : Prof. Dr. Ahmed AZMY
Head of Department : Prof. Dr. Ahmed AZMY
Date : 2015