Banah University
Shoubra Faculty of Engineering
Industrial Engineering Department

Course Specification
Computer Programming

Course Specifications

Program(s) in which the course is given:	Industrial Engineering
Major or minor element of programs:	N/A
Department offering the program:	Industrial Engineering
Department offering the course:	Math & Physics
Academic year / Level:	2009/2010 / Level 1

Date of specification approval:

A- Basic Information

Title: Computer Programming and Numerical Analysis Code: ELC 101

Credit Hours:

Lecture:	2
Exercises:	2
Total:	4

B- Professional Information

1- Overall aims of the course:

The course is designed to give students basic information about computer programming as well as some numerical analysis methods

2- Intended learning outcomes of the course (ILOs)

a. Knowledge and understanding

Computer programming: Introduction and basics of programming – Operating systems- Storage systems- Data base- Algorithm and software packages- Advanced applications.

Numerical Analysis: Curve fitting and interpolation- Numerical methods for solution of algebraic equations- Numerical differentiation and integration- Numerical solution of ordinary differential equations.

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Intellectual skills

☒ Analysis ☐ Creative thinking ☒ Problem solving

b. Professional and practical skills

☒ Managing ☐ Engineering design
☒ Computer program ☐ Ability to diagnose
☒ Ability to identify the problem
☒ Ability to estimate cost ☐ Other

c. General and transferable skills

☒ Computing ☐ Communication
☒ Management ☒ Working in group
☐ Use of technological tools

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Basics of C++	8	4	4
Control Statement	8	4	4
Arrays & Function	8	4	4
Files	8	4	4
Introduction to object oriented	8	4	4
Programming	8	4	4
Case studies	12	6	6
Total	60	30	30

4- Teaching and learning methods

- ☒ Information collection
- ☒ Research assignment
- ☒ Lecture
- ☒ Class activities
- ☒ Discussions
- ☐ Field visit
- ☐ Practical training / lab
- ☒ Case study

5- Student assessment methods

Class attendance and participation
Homework assignments
First midterm exam
Final exam

Assessment schedule

Homework assignments	weeks 3, 5, 7, 9, 11
First midterm exam	weeks 7 & 12
Final exam	week 15

Weighting of assessments

Final	40 %
7^{th} week Exam	30 %
12^{th} week Exam	20 %
Class attendance and participation	5 %
Homework assignments	5 %

6- List of references

6.1 Course notes

6.2 Essential books

- Ravichandsran,"Programming in C",New age,2005.
- Herbert Schilatt "The Complete Referance C#",Tata Mcgraw,2005.

6.3 Recommended books

- Rad Paddock ,"Hands on
- VB5 for web Development ",Golotia,1998.
- Balagurusang "Programming with Java", Tata Mcgraw,2005.

7- Facilities required for teaching and learning

- Computer Lab
- Data Show
- Overhead Projector

Course Coordinator: Prof. Dr.Yeiha El Mashed - Dr.Ramadan Sakr
Program Coordinator: Prof. Dr. Attia Gomaa
General Supervisor & Vice Dean: Prof. Dr. Abdallh Saad
Date: 01 / 06 / 2010