# Model No.12
# Course Specifications : Computer Programming 1

**University** : Benha university

**Faculty** : Faculty of Engineering at Shoubra

**Department** : Electrical Engineering Department

## 1- Course Data

Course Code : ECE 113c    Course Title : Computer Programming 1    Study Year : First Year

Teaching Hours:
  Lecture : 4                  Tutorial : 2                        Practical :

## 2- Course Aim

For students undertaking this course, the aims are to:

2.1- Have a clear overview of how to solve programming problems.
2.2- Be able to give a computer solution to engineering problems.
2.3- Be able to Share ideas and work in a team in an effective manner.

## 3- Intended Learning Outcomes of Course (ILOS)

### a- Knowledge and Understanding

On completing this course, students will be able to:

a.1) Define concepts and theories of sciences, appropriate to the computer programming.(a2)

a- 2.Describe principles of design including elements design, process and/or a system related to specific computer programming.(a5)

### b- Intellectual Skills

At the end of this course, the students will be able to:

b- 1. Select appropriate mathematical and computer-based methods for analyzing problems. (b2)

b- 2. Select appropriate solutions for engineering problems based on analytical thinking. (b3)

b- 3. Think in a creative and innovative way in problem solving and design. (b4)

### c- Professional Skills

On completing this course, the students are expected to be able to:

c- 1.Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems (c1)

c- 2. Professionally merge engineering knowledge and understanding to improve design, products and/or services. (c2)

c- 3. Create and/or re-design a process, component or system, and carry out specialized engineering designs. (c3)

### d- General Skills

At the end of this course, the students will be able to:

d- 1. Collaborate effectively within multidisciplinary team. (d1)

d- 2. Work in stressful environment and within constraints. (d2)

d- 3. Communicate effectively. (d3)

## 4- Course Contents

| No. | Topics | No. of hours |
|---|---|---|
| 1 | Introduction to C++ | 4 |
| 2 | Basic Syntaxes | 4 |
| 3 | Variables and Types | 4 |
| 4 | Operations | 4 |
| 5 | Flow Control: Conditional (Decision) Flow Control | 4 |
| 6 | Flow Control: Loop Flow Control | 4 |
| 7 | Strings | 4 |
| 8 | Arrays | 4 |
| 9 | Multi-Dimensional Array | 4 |
| 10 | Functions | 8 |
| 11 | Pointers | 4 |

## 5- Teaching and Learning Methods

5.1- Modified lectures
5.2- Class activity
5.3- Assignments

## 6- Teaching and Learning Methods of Disables

6.1- No Thing

## 7- Student Assessment

### a- Student Assessment Methods

| | |
|---|---|
| 1 | Assignments to assess   knowledge and intellectual skills. |
| 2 | Quizzes to assess   knowledge and intellectual skills. |
| 3 | Mid-term exam. to assess   knowledge and intellectual skills. |
| 4 | Final exam.  to assess   knowledge and intellectual skills. |
| 5 | Reports and Seminars  to assess knowledge, intellectual skills, and professional skills. |

### b- Assessment Schedule

| No. | Assessment | Week |
|---|---|---|
| 1 | Assignments | 2, 4, 6, 9, 11, 14 |
| 2 | Presentations | 3, 12 |
| 3 | Mid Term Exam | 8 |
| 4 | Report | 1,7 |
| 5 | Final Exam | 15 |
| 6 | quizzes | 5, 10 ,13 |

### c- Weighting of Assessments

| Assessment | Weight |
|---|---|
| Mid-term Examination | 10 % |
| Final-term Examination | 60 % |
| Oral Examination | 20 % |
| Practical Examination | 0 % |
| Semester work | 10 % |
| Other types of assessment | 0 % |
| Total | 100 % |

**8- List of References**

    **a- Books**

        1- Tony Gaddis, Judy Walters, Godfrey Muganda, Starting Out with C++: Early Objects (7th Edition), 2010

        2- John C. Molluzzo , C++ for Business Programming, Second Edition, Prentice Hall, 2005

    **b- Recommended Books**

        1- Roberrt Lafore, Object oriented programming in C++, 4th edition, SAMS, 2002

**- Course Coordinator :**

**Course instructor :**     **Dr. Islam  Elsharawy**

**- Head of Department :**   **Prof. Dr. Sayed Abo-Elsood Ward**

# Model No.11A
## Course Specifications : Computer Programming 1

Shoubra Faculty of Engineering

**University** : Benha university

**Faculty** : Shoubra Faculty of Engineering

**Department** : Electrical Engineering Department

**Matrix of Knowledge and Skills of the course**

| No. | Topics | week | Basic Knowledge | Intellectual Skills | Professional Skills | General Skills |
|---|---|---|---|---|---|---|
| 1 | Introduction to C++ | 1 | a1,a2 | b2 | c2 | |
| 2 | Basic Syntaxes | 2 | a1,a2 | b2 | c2 | |
| 3 | Variables and Types | 3 | a1,a2 | b2 | c3 | |
| 4 | Operations | 4 | a1,a2 | b2 | c3 | |
| 5 | Flow Control: Conditional (Decision) Flow Control | 5 | a1,a2 | b1,b2,b3 | c1,c3 | |
| 6 | Flow Control: Loop Flow Control | 6 | a1,a2 | b1,b2,b3 | c1,c3 | |
| 7 | Strings | 7 | a1,a2 | b2 | c1,c3 | |
| 8 | MID-TERM | 8 | a1,a2 | b1,b2,b3 | | d2 |
| 9 | Arrays | 9 | a1,a2 | b2 | c3 | |
| 10 | Multi-Dimensional Array | 10 | a1,a2 | b2 | c3 | |
| 11 | Functions | 11,12 | a1,a2 | b1,b2 | c1,c3 | |
| 12 | Pointers | 13 | a1,a2 | b1,b2 | c1,c3 | |
| 13 | Oral Exam | 14 | a1,a2 | b1,b2,b3 | c1,c2,c3 | d1,d2,d3 |
| 14 | Final Exam | 15 | a1,a2 | b1,b2,b3s | | d2 |

# Matrix of Course Content and ILO's

**Course Title**: **Computer Programming 1**        **Code**: ECE 113c

**Lecture**: 4      **Tutorial**: 2      **Practical**: ----

       **Total: 6**

**Program on which the course is given:** B.Sc. Electrical Engineering (Communications)

**Major or minor element of program:** Major

**Department offering the program** Electrical Engineering Department

**Department offering the course:**     Electrical Engineering Department

**Academic year / level: First** Year / **First** Semester **2014-2015**

**Date of specifications approval:** 20/6/2010

| Course content | a1 | a2 | b1 | b2 | b3 | c1 | c2 | c3 | d1 | d2 | d3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Introduction to C++ | ✓ | ✓ | | ✓ | | | ✓ | | | | |
| Basic Syntaxes | ✓ | ✓ | | ✓ | | | ✓ | | | | |
| Variables and Types | ✓ | ✓ | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Operations | ✓ | ✓ | | ✓ | | | | ✓ | | | |
| Flow Control: Conditional (Decision) Flow Control | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | |
| Flow Control: Loop Flow Control | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | |
| Strings | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Arrays | ✓ | ✓ | | ✓ | | | | ✓ | | | |
| Multi-Dimensional Array | ✓ | ✓ | | ✓ | | | | ✓ | | | |
| Functions | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Pointers | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | | | |

# Matrix of Course Aims and ILO's

**Course Title**: **Computer Programming 1**         **Code**: ECE 113c .

**Lecture**: 4       **Tutorial**: 2       **Practical**: ----

     **Total:** 6.

**Program on which the course is given:** B.Sc. Electrical Engineering (Communications)

  **Major or minor element of program:** Major      **Department offering the program** Electrical Engineering Department

**Department offering the course:**     Electrical Engineering Department

**Academic year / level: First** Year / **First** Semester **2014-2015**

**Date of specifications approval:** 20/6/2010

| Course Aims | a1 | a2 | b1 | b2 | b3 | c1 | c2 | c3 | d1 | d2 | d3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.1- Have a clear overview of how to solve programming problems. | ✓ | ✓ | ✓ | | | ✓ | | | | | |
| 2.2- Be able to give a computer solution to engineering problems. | | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| 2.3- Be able to Share ideas and work in a team in an effective manner. | | ✓ | | ✓ | ✓ | | | | ✓ | | |

 **- Course Coordinator :**


  **Course instructor :**      **Dr. Islam Elsharawy**


 **- Head of Department :**    **Prof. Dr. Sayed Abo-Elsood Ward**