



جامعة الفيوم
Fayoum University



كلية الحاسبات والمعلومات

Fayoum University

Faculty of computers & Information

Object Oriented Programming

Programme(s) on which the course is given: B.Sc degree in Information System
Major or minor element of programmes: Major
Department offering the programme: Information System department
Department offering the course: Computer Science department
Academic year / Level: Second year – Second term
Date of specification approval:

A- Basic Information

Title: Object Oriented Programming

Code: CSC 251

Credit Hours: ----

Lecture: 3 hrs / week

Tutorial: 0 hrs / week

Practical: 3 hrs / week

Total: 6 hrs / week

B- Professional Information

1. Overall Aims of Course.

This course introduces the object-oriented approach to problem-solving, program design, coding and testing using the C++ programming language. Emphasis is placed upon developing software from reusable components. Concepts covered include data hiding, code reuse through inheritance, polymorphism, templates, exception handling, developing appropriate class hierarchy and code maintenance for large software projects.

2. Intended Learning Outcomes of Course (ILOs)

a) Knowledge and Understanding:

On completion of this course students will be able to:

- a1- Understanding basic concepts of Object Oriented programming: class, object, aggregation, polymorphism, virtual functions, inheritance, and templates.
- a2- Designing and developing of medium-sized applications and libraries using C++.
- a3- Understanding the details and power of the C++ language.

b) Intellectual Skills:

At the end of the course, the student will be able to:

- b1- Identifying problems in various fields and thinking about their solution creatively.

- b2- Describing and clarifying methods to formulate and solve problems.
- b3- Applying different techniques in solving problems.

c) Professional and Practical Skills:

At the end of the course, the student will be able to:

- c1- Define, initialize, dereference and manipulate pointers.
- c2- Manipulate arrays using pointer notation.
- c3- Define, design and use simple C++ classes, including at least one project that uses a class inheritance hierarchy.
- c4- Manipulate both standard C-strings using the cstring library and string objects using the ANSI string library.
- c5- Overload C++ operators both as member functions and friend functions.
- c6- Define and use virtual member functions to implement polymorphic behavior.
- c7- Use the new and delete operators to implement a singly linked list.
- c8- Use the STL in developing C++ applications.

d) General and Transferable Skills:

At the end of the course, the student will be able to:

- d1- Working in a group and learning the time management.
- d2- Learning some Internet/Library searching strategies.
- d3- Presenting a short report in a written form using appropriate scientific language.

3. Content of Course

Topic	No. of Hrs	Lecture	Tutorial/ Practical
Introduction to OOP	6	3	3
Classes and data abstraction	6	3	3
Class, constructor, destructor, data member, member functions.	6	3	3
Sheet#1			
Operator overloading	6	3	3
Sheet#2			
Inheritance	6	3	3
Sheet#3			
Virtual function and polymorphism	6	3	3
Sheet#4			
Templates	6	3	3
Sheet#5			
STL	6	3	3
Sheet#6			

4. Teaching and Learning Methods

- Lectures

- Tutorials
- Computer-lab Sessions
- Practical lab work
- Class discussions
- Internet searches
- Problem-based Learning

5. Student Assessment

a) Assessment Methods

- Assignments and Quizzes
- Midterm written exam
- Oral exam
- Practical exam
- Final written exam

b) Assessment schedule

Midterm examination	Week 7
Practical examination	Week 13
Oral examination	Week 14
Final examination	Week 15

c) Weighting of assessments

Assignments and Quizzes	0 %
Mid-Term Examination	8%
Oral Examination	8%
Practical Examination	12%
Final-term Examination	72%
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Total	100 %

6. List of References

a) Course notes:

Handouts and notes prepared by the instructor

b) Essential Books (Text Books):

Object Oriented Programming in C++, Fourth Edition, Robert Lafore, 2002.
ISBN No. 0-672-32308-7

c) Recommended Books:

- Averill M. Law and W. David Kelton, Simulation modeling and analysis: Third edition, 2002.
- Christopher A. Chung, Simulation modeling handbook : a practical approach, CRC Press (2004).

d) Web Sites:

<http://www.cplusplus.com/>

7. Facilities Required for Teaching and Learning

- Computer lab with a C++ IDE installed.
- Whiteboard and Data show device.
- Internet connection.
- Available new edition of text books in library.

Course coordinator: Dr. Mohammed S. Kayed

Head of Department:

Date: / /