Course Profile

Course Name:-	**Object Oriented Programming**
Course Code:-	**CEN320**
Academic Year:-	**2014**
Semester:-	**2nd**

Course Overview

This course is introducing the following topics an overview of C++ basic concepts, essential concepts of object oriented programming including: objects, classes (data members, function members, constructors, destructors, access and modifiers functions, friend classes and functions), abstraction, inheritance(base and derived classes, protected members, function overriding, public and protected and private inheritance, has A and is A relationships), encapsulation, reusability, virtual functions and polymorphism, operators overloading, class templates, exceptions processing.

Course Details	
Level:-	**7**
Credit:-	**3(2-0-2)**
Pre-Requisites:-	**CEN 215**
Co- Requisites:-	**NA**

Learning Outcomes of Course

After successful completion of this course, student will be able to-

1. Students should gain the knowledge of the basic concepts of object oriented programming, and their realization in C++.
2. Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative.
3. Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse.
4. Students will have sufficient knowledge and understanding of the class to create required classes themselves.
5. Students are expected to reach a level of competence enabling them to easily learn other similar programming languages.

Course Assessment

Name of Assessment Task	Weight of Assessment	Week Due
1. Midterm Exam-1	15%	Week 6
2. Midterm Exam-2	15%	Week 10
3. Quizzes/Assignments/Report/Seminar	10%	Week 9
4. Lab	20%	Week 12
5. Final Exam	40%	Week 15

Assessment Task and Learning Outcomes Alignment

Assessment Task Name	Course Learning Outcomes					
	1	2	3	4	5	6
1. Midterm Exam-1	√	√	√	√		
2. Midterm Exam-2	√	√	√	√	√	
3. Quizzes/Assignments/Report/Seminar	√	√	√	√	√	
4. Lab	√	√	√	√	√	
5. Final Exam	√	√	√	√	√	

Teaching Contact Details

Name of Course Coordinator:-	**Dr. Ahmad Raza Khan**
Email of Course Coordinator:-	**ar.khan@mu.edu.sa**
Lab/Tutorial Instructor:-	**Mr. Mohammed Abdul Khader**
Email of Lab/Tutorial Instructor:-	**a.mohammed@mu.edu.sa**
Office Hours:-	**8:00am to 2:30pm**
Office Number:-	**024-1-19-1**
Office Phone Number:-	**01640425-2536**

Details of Required Text Book

Book Name	Authors Name	Publisher	Year	Edition
1. C++ How to Program	H.M.Deitel, P.J.Deitel	Prentice Hell	Feb 22 2013	9th Edition

Details of Required Reference Books

Book Name	Authors Name	Publisher	Year	Edition
1. Object-Oriented Programming	Robert Lafore	SAMS	Dec 29 2001	4th Edition
2.				
3.				

IT Resources

The following IT Resources will require to access-

1. MU University Student Email
2. Internet
3. Course Website
4. Computer System with Software to run C++ lab

Course Schedule

Course Topics	Book's Chapter	Event Name	Week Due
An overview of C++ basic concepts	Chapter 1		Week-1
Essential concepts of object oriented programming	Chapter 2	Assignment on applications of Object Oriented programming	Week-2
Objects classes (data members, function members, constructors, destructors,)	Chapter 3	Assignment on Classes and Objects	Week-3
Access and modifiers functions, friend classes and functions	Chapter 3,10	Assignment on Friend classes and some functions	Week-4
Abstraction, inheritance	Chapter 12	Assignment on abstraction	Week-5

		and inheritance	
Base and derived classes, protected members, function overriding	**Chapter 6**	**Mid Term -1 Exam**	**Week-6**
public and protected and private inheritance, had A and is A relationships	**Chapter 12**	**Assignment on protected member function**	**Week-7**
Encapsulation, reusability	**Chapter 12**		**Week-8**
Virtual functions and polymorphism	**Chapter 13**	**Online Quizzes**	**Week-9**
Operators overloading	**Chapter 11**	**Mid Term 2 Exam**	**Week-10**
Class templates	**Chapter 14**	**Assignment on polymorphism and operator overloading**	**Week-11**
Exceptions processing	**Chapter16**		**Week-12**
Review Exam Week			**Week-13**
Review Exam Week			**Week-14**
Review Exam Week			**Week-15**
Final Exam			**Exam Week**

Referencing Style

The **American Psychological Association (APA)** referencing style must be use for all submissions of this course.

Course Assessment Task

Assessment Name:-	Midterm Exam-1
Description of Task Assessment:-	This assignment is aligned to learning outcomes 1, 2, 3 and 4. In that regard, the assignment contains questions that assess: 1) Students' thorough understanding of Objects and Classes ; 2) Students' understanding about Access and modifiers functions, friend classes and functions. 3) Students' learn Abstraction, inheritance. 4) Students should have knowledge of Base and derived classes.
Task Assessment Due Week/Date:-	**Week 6**
Return Week/Date to Students:-	**Week 8**
Weight of Task Assessment:-	**15%**
List of Learning Outcomes Assessed:-	**1.** Students should gain the knowledge of the basic concepts of object oriented programming, and

	their realization in C++. **2.** Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative. **3.** Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse. **4.** Students will have sufficient knowledge and understanding of the class to create required classes themselves.

Assessment Name:-	Midterm Exam-2
Description of Task Assessment:-	This assignment is aligned to learning outcomes 1, 2, 3, 4 and 5. In that regard, the assignment contains questions that assess: 1) Students' thorough understanding public and protected and private inheritance; 2) Students' understanding about Encapsulation, reusability, Virtual functions and polymorphism. 3) Students' learning Operators overloading, Class templates, Exceptions Processing.
Task Assessment Due Week/Date:-	**Week 10**
Return Week/Date to Students:-	**Week 11**
Weight of Task Assessment:-	**15%**
List of Learning Outcomes Assessed:-	**1.** Students should gain the knowledge of the basic concepts of object oriented programming, and their realization in C++. **2.** Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative. **3.** Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse. **4.** Students will have sufficient knowledge and understanding of the class to create required classes themselves. **5.** Students are expected to reach a level of competence enabling them to easily learn other similar programming languages

Assessment Name:-	Online Quizzes/ Assignments/Report/Seminar
Description of Task Assessment:-	This assignment is aligned to learning outcomes 1, 2, 3, 4 and 5. An online quiz will be conducted for the students on all the topics covered students have to use the computer system to check the correct answer.
Task Assessment Due Week/Date:-	**Week 09**

Return Week/Date to Students:-	**Week 09**
Weight of Task Assessment:-	**10%**
List of Learning Outcomes Assessed:-	**1.** Students should gain the knowledge of the basic concepts of object oriented programming, and their realization in C++. **2.** Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative. **3.** Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse. **4.** Students will have sufficient knowledge and understanding of the class to create required classes themselves. **5.** Students are expected to reach a level of competence enabling them to easily learn other similar programming languages.

Assessment Name:-	Lab
Description of Task Assessment:-	This assignment is aligned to learning outcomes 1, 2, 3, 4 and 5. All students have to submit there assignments and homework in time.
Task Assessment Due Week/Date:-	**Week 02,03,04,05,07,11**
Return Week/Date to Students:-	**Week 03,04,05,06,08,12**
Weight of Task Assessment:-	**20%**
List of Learning Outcomes Assessed:-	**1.** Students should gain the knowledge of the basic concepts of object oriented programming, and their realization in C++. **2.** Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative. **3.** Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse. **4.** Students will have sufficient knowledge and understanding of the class to create required classes themselves. **5.** Students are expected to reach a level of competence enabling them to easily learn other similar programming languages.

Assessment Name:-	Final Exam
Weight of Task Assessment:-	40%
Duration:-	**3Hrs**
Warning:-	
List of Learning Outcomes Assessed:-	**1.** Students should gain the knowledge of the basic

	concepts of object oriented programming, and their realization in C++. **2.** Students should be able to compare and contrast the Object Oriented approach to software implementation with its procedural alternative. **3.** Students have to justify the use of the Object Oriented approach to software development according to the key benefits of maintainability and software reuse. **4.** Students will have sufficient knowledge and understanding of the class to create required classes themselves. **5.** Students are expected to reach a level of competence enabling them to easily learn other similar programming languages.