2202 CS111 & EIE111 Course Outline

Subject Code : CS111
Subject Title : OBJECT-ORIENTED PROGRAMMING
Course Type : Compulsory
Level : 1
Credits : 3
Teaching Activity : Lecture 45 hours
Prior Knowledge* : CS110 or EIE110 C programming
Class Schedule :

Class	Week	Time	Classroom	Date
CS111 D2 EIE111 D2	Tue	12:30-15:20	B401	30/01/2023 - 14/05/2023
CS111 D3 EIE111 D3	Thu	12:30-15:20	B401	30/01/2023 - 14/05/2023

Instructor : Zhiyao Liang
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E-mail Address : zyliang@must.edu.mo
Office : Room A216
Office Hour : Monday 12:00 --15:00
Tuesday 10:00 -- 12:00
Wednesday 14:30 -- 17:30
Thursday 10:00 -- 12:00

COURSE DESCRIPTION

The course introduces the basic Object-Oriented Programming concepts to students who learn computer programming for the first time. The course is based on the C++ programming language. This is a one semester course. Concept and practice are the emphasis of this course.

TEXTBOOKS

Suggested Textbook:

1. Stephen Prata. *C++ Primer Plus*, 5th or 6th Edition, Pearson, 2012. ISBN：978-0321-77640-2

Reference Books:

1. *C Traps and Pitfalls*, by Andrew Koenig, publisher: Addison-Wesley, 1989, ISBN：9780201179286.
2. *C Programming Language*, 2nd edition; by Brian W. Kernighan, Dennis Ritchie; pubisher: Prentice Hall, 1988; ISBN：9780131193710.
3. Bjarne Stroustrup. Books and resources at http://www.stroustrup.com/
4. *Thinking in C++, Vol. 1: Introduction to Standard C++, 2nd* Edition, publisher: Prentice Hall, 2000, ISBN：9780139798092
5. *Thinking in C++Volume 2: Practical Programming*, by Bruce Eckel, publisher: Prentice Hall, 2003, ISBN：9780131225527
6. *Data Abstraction & Problem Solving with C++: Walls and Mirrors*, 7th edition,

by Frank M. Carrano and Timothy Henry, publisher: Pearson; 7th edition (March 14, 2016) 2021, ISBN-13: 978-0134463971

7. *Data Abstraction and Problem Solving With C++ : Walls and Mirrors 2nd Edition*, by Frank M. Carrano, Paul Helman, Robert Veroff, Publisher: Addison-Wesley 1997

INTENDED LEARNING OUTCOMES

Upon successful completion of this subject, students will be able to:

1. Appreciate the good style and habits in programming.
2. Appreciate the art and importance of algorithms.
3. Understand the steps in the whole process of building a program.
4. Evaluate the correctness of a programs and find the fix of errors.
5. Analyze different programming solutions of a task.
6. Understand the key features of Object-Oriented Programming.
7. Write complete C++ programs.
8. Read and understand C++ programs.
9. Understand and implement modular design and reusable software tools.
10. Experience working and communication in groups for project.

Weekly Schedule

Week	Topics	Hours	Teaching Method
1, 2	Abstract Data Type, Interface, stack and queue	6	Lecture
3	General Introduction of C++	3	Lecture
4	Data of C++	3	Lecture
5	Memory modules and namespaces	3	Lecture
6	Introduction of Objects and Classes	3	Lecture
7, 8	Using classes, operator overloading, friend functions, implicit member functions	6	Lecture
9, 10	Class inheritance, virtual functions, public inheritance	6	Lecture
11, 12	Code reusing, class templates	6	Lecture
13	More features or friend classes and member functions, exceptions,	3	Lecture
14	Some provided tools, template library, string class	3	Lecture
15	Review and summary	3	Lecture

ASSESSMENT APPROACH

Assessment method	% weight
1.Attendance (Class participation)	8%
2.Assignments	50%
3. Quizzes	12%
4.Final exam	30%
Total	100 %

Guideline for Letter Grade:

Marks	Grade
93-100	A+
88-92	A
83-87	A-
78-82	B+
72-77	B
68-71	B-
63-67	C+
58-62	C
53-57	C-
51-52	D+
50	D
< 49	F

Notes:

Students will be assessed based on the continuous assessment (i.e. coursework in the form of individual written assignments, quizzes) and by the end of the semester one final examination.