COURSE SYLLABUS
COM203: Intermediate Game Programming C++

Course Description

This course will further develop the student's knowledge of Object Oriented Programming (OOP), enabling the student to write well-structured game programs. The student will study OOP concepts such as objects, classes, abstraction, inheritance, encapsulation, and polymorphism along with basic concepts, such as pointers. The students are also introduced to additional libraries, which will be used to increase their understanding of the basic concepts of graphics and game programming.

General Course Information

Number of Units/Weeks	8/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	60/40/120
Prerequisite(s)	COM107
Co-requisites (s)	None
Course Developer(s)	Sowmya Ganore MS, M.C.A.
Date Approved / Last Review	March 2010 / August 2014

Learning Outcomes

- Apply the concepts of objects, classes, abstraction, inheritance, encapsulation, and polymorphism
- Design and implement structured, modular object orientated programs
- Use Object Technology and UML concepts
- Use existing code and libraries in projects, produce libraries, and share code for use in other projects
- Design, implement, and test computer programs and games using a compiler and additional libraries

Instructional Methods Employed in this Course

- Lecture and reading assignments
- Hands-on exercises and labs
- Practical application of theory and skills in authentic Programming Projects
- Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

📖 **Textbook**

Deitel, Harvey and Paul Deitel. (2010). C++ How to Program. (9th ed.). Upper Saddle River, NJ: Prentice Hall.

🗀 **Other Materials**

Coleman College. (2009) <u>The College Writer's Guide</u>. San Diego: Coleman College.

Table/Topics & Assignments

Types of Assignments:

Lecture -

Considered Lecture Hours

Classroom Discussion -

Considered Lecture Hours

In Class Critique -

Considered Lecture Hours

Delivering Oral Presentations -

Considered Lecture Hours

In Class (IC) Exercise -

Considered Lecture Hours

Reading -

Considered Homework (HW), work done outside of class

WebClass lesson (non-online courses) -

Considered HW, work done outside of class

Lab Work -

Considered Lab Hours

Quiz, Midterm or Final -

Considered Lecture Hours

Week 1						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 1A	Introduction to C++ & OOAD	3	1	--	--	
LEC 1B	Control Statements: part 1	3	1	--	--	
LAB 1A	Control Statements: part 1	1	4	--	--	
HW 1A	Read: Lessons 1 & 2, Chapters 2, 3 & 4 (118 pages)	--	--	11.8	--	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
	Evaluated by HW 1B					
HW B	Discussion Questions: Lessons 1 & 2 (30 Questions)	--	--	2	20	Week 2
HW 1C	Complete Design Project: Gameplay	--	--	8	50	Week 5
Total Week 1		7	6	21.8	70	

Week 2

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 2A	Control Statements: part 2	3	1	--	--	
LEC 2B	Functions and Recursion	3	1	--	--	
HW 2A	Read: Lessons 3 & 4, Chapters 5 & 6 (102 pages) Evaluated by HW 2B	--	--	10.2	--	
HW 2B	Discussion Questions: Lessons 3 & 4 (30 Questions)	--	--	2	20	Week 3
HW 2C	Project: PetSim	--	--	6	50	Week 3
Total Week 2		6	2	18.2	70	

Week 3

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Arrays and Vectors	3	1	--	--	
LEC 3B	Pointers	3	1	--	--	
LAB 3A	Complete Project: Pet Sim	0	4	--	--	
HW 3A	Read: Lessons 5 & 6, Chapters 7 & 8 (93 pages) Evaluated by HW 3B	--	--	9.3	--	
HW 3B	Discussion Questions: Lessons 5 & 6 (30 Questions)	--	--	2	20	Week 4
HW 3C	Project: TicTacToe 2A	--	--	2	20	Week 4
Total Week 3		6	6	13.3	40	

Week 4

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Classes	3	1	--	--	
LEC 4B	Classes Part 2	3	1	--	--	
HW 4A	Read: Lessons 7 & 8, Chapters 9 & 10 (71 pages) Evaluated by HW 4B	--	--	7.1	--	
HW 4B	Discussion Questions: Lessons 7 & 8 (30 Questions)	--	--	2	20	Week 5
HW 4C	Project: TicTacToe 2B	--	--	8	80	Week 5
Total Week 4		6	2	17.1	100	

Week 5

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Operator Overloading	3	1	--	--	
LEC 5B	Operator Overloading continued	3	1	--	--	
EXAM 5A	Midterm Exam	---	4	--	150	
HW 5A	Read: Lesson 9, Chapter 11 (51 pages) Evaluated by HW 5B	--	--	5.1	--	
HW 5B	Discussion Questions: Lessons 9 (15 Questions)	--	--	1	10	Week 6
Total Week 5		6	6	6.1	160	

Week 6

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Inheritance	3	1	--	--	
LEC 6B	Polymorphism	3	1	--	--	
HW 6A	Read: Lesson 10, Chapter 12 (55 pages) Evaluated by HW 6B	--	--	5.5	--	
HW 6B	Questions: Lessons 9 (15 Questions)	--	--	1	10	Week 7
HW 6C	Project: Blackjack	--	--	8	100	Week 7
Total Week 6		6	2	14.5	110	

Week 7

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Polymorphism continued	3	1	--	--	
LEC 7B	Exception Handling	3	1	--	--	
LAB 7A	Complete Project: Black Jack	1	3	--	--	
HW 7A	Read: Lessons 11 & 12, Chapters 13 & 16 (84 pages) Evaluated by HW 7B	--	--	8.4	--	
HW 7B	Discussion Questions: Lessons 11 & 12 (30 Questions)	--	--	2	20	Week 8
Total Week 7		7	4	10.4	20	

Week 8

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	File Processing	3	1	--	--	
LEC 8B	Data Structures	3	1	--	--	
HW 8A	Read: Lessons 13 & 14, Chapters 17 & 20 (76 pages) Evaluated by HW 8B	--	--	7.6	--	
HW 8B	Discussion Questions: Lessons 13 & 14 (30 Questions)	--	--	2	20	Week 9
HW 8C	Complete Project: Hangman	--	--	8	100	Week 9
Total Week 8		6	2	17.6	120	

Week 9

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 9A	Data Structures	3	1	--	--	
LEC 9B	Ogre	3	1	--	--	
LAB 9A	Project: Pong	--	4	--	150	Week 10
HW 9A	Read: Lesson 15, Chapter 27 (43 pages) Evaluated by HW 9B	--	--	4.3	--	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
HW 9B	Discussion Questions: Lesson 15(15 Questions)	--	--	1	10	Week 10
HW 9C	Complete Project: Pong	--	--	8	--	
Total Week 9		6	6	13.3	160	

Week 10

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 10A	Course Wrap Up	0	4	--	--	
EXAM 10A	Final Exam	4	0	--	150	Week 10
Total Week 10		4	4	--	150	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Introduction to C++ & OOAD, Introduction to Classes and Objects, Control Statements: part 1	7	6	21.8
2	Control Statements: part 2, Functions and Recursion	6	2	18.2
3	Arrays and Vectors, Pointers	6	6	13.3
4	Classes	6	2	17.1
5	Operator Overloading	6	6	6.1
6	Inheritance	6	2	14.5
7	Polymorphism, Exception Handling	7	4	10.4
8	File Processing, Data Structures	6	2	17.6
9	Ogre	6	6	13.3
10	Course Wrap Up	4	4	0
Total		60	40	132.3

Table/Point Breakdown

Assignment Type	Possible Points	Percent of Grade
ELP 1B, Discussion Questions	20	2
ELP 1C, Design Document	50	5
ELP 2B, Discussion Questions	20	2
ELP 2C, Project: PetSim	50	5
ELP 3B, Discussion Questions	20	2
ELP 3C, Project: TicTacToe 2A	20	2
ELP 4B, Discussion Questions	20	2
ELP 4C, Project: TicTacToe 2B	80	8
EXAM 5A, Midterm Exam	150	15
ELP 5B, Discussion Questions	10	1
ELP 6B, Discussion Questions	10	1
ELP 6C, Project: Black Jack	100	10
ELP 7B, Discussion Questions	20	2
ELP 8B, Discussion Questions	20	2
LAB 8C, Project: Hangman	100	10
ELP 9B, Discussion Questions	10	1
ELP 9C, Project: Pong	150	15
EXAM 10A, Final Exam	150	15
	1000	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal
AU = Audit	TR = Transfer Credit
WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.