

# COURSE SYLLABUS

## COM380 Advanced C++.NET Programming

### Course Description

This course is a study of object-oriented programming with Visual C++.NET as the medium of expression. Topics include object-Based Programming, Visual C++.NET Input/Output streams, Managed Extensions for C++, Visual C++.NET functions, references, classes, encapsulation, inheritance, polymorphism as well as ADO.NET.

### General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	30/20/60
Prerequisite(s)	COM275 or COM203
Co-requisites (s)	N/A
Course Developer(s)	S. Mayer, MS
Date Approved / Last Review	June 2006 / August 2014

### Learning Outcomes

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

Use the three major concepts in the object-oriented approach: encapsulation, inheritance, and polymorphism.

Use the process of object-oriented analysis and the discovery of natural objects for simple problems.

Inheritance and abstract classes and develop an instinct for the application of each.

Use data binding and the use of ADO.NET components.

Explain the difference between static memory allocation (the static data area), automatic memory allocation (the stack), and dynamic memory allocation (the heap) and to correctly apply each.

### Instructional Methods Employed in this Course

Lecture and reading assignments

Hands-on exercises and labs

Research

Student presentations

Practical application of theory and skills in authentic projects

Build on prior knowledge and experience of students to enhance richness of class activities

The difference between static memory allocation (the static data area), automatic memory allocation (the stack), and dynamic memory allocation (the heap). Know how best to apply each.

### Information Resources for this Course



### Textbook

Deitel, H. M., P.J. Deitel, J.P. Liperi, and C.H. Yaeger. Visual C++.NET How To Program. Prentice Hall. 2004. ISBN-13: 978-0134373775.



### Other Materials

N/A



### Drawing tools

N/A



### Web Site Readings

N/A

## 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

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 1A	Introduction to course, Visual C++.NET programming, Visual Studio .NET IDE	3				
LAB 1A	Exercise 1: displaying text and images		2		50	In class
HW 1A	Read chapters 1, 2, & 3 (64 pages). Evaluated in Project 1			6.4		
HW 1B	Project 1: Addition and Comparison			2	50	Week 2
Total Week 1		3	2	8.4	100	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 2A	Control statements, C++ functions and arrays	3				
HW 2A	Read chapters 4, 5, 6, & 7 (108 pages). Evaluated in Exercise 2			10.8		
LAB 2A	Exercise 2: analysis, switch test, Craps game, roll dice		2		50	In class

Total Week 2		3	2	10.8	50	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Object-based programming, OOP - inheritance and polymorphism	3				
HW 3A	Read chapters 8, 9, & 10 (160 pages). Evaluated in project 2			16		
LAB 3A	Exercise 3: Instantiating objects		2		50	In class
HW 3B	Project 2: payroll			4	100	Week 4
Total Week 3		3	2	20	150	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Exception handling. String, characters & regular expressions	3				
HW 4A	Read chapters 11 & 15 (78 pages). Evaluated in exercise 4			7.8		
LAB 4A	Exercise 4: Applying regex		2		50	In class
Total Week 4		3	2	7.8	50	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Graphical user interface	3				
HW 5A	Read chapters 12 & 13 (127 pages). Evaluated in exercise 5			12.7		
LAB 5A	Exercise 5: creating an interface		2		50	In class
Exam 5A	Project 3: Cleaners			4	100	Week 6
Total Week 5		3	2	16.7	150	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Files and streams	2				
HW 6A	Read chapter 17 (90 pages). Evaluated in project 4			9		
LAB 6A	Exercise 6: creating streams		3		50	In class
HW 6B	Project 4: files			3	100	Week 7
Total Week 6		2	3	12	150	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Database, SQL and ADO.NET	3				
HW 7A	Read chapter 19 (52 pages). Evaluated in exercise 7			5.2		
LAB 7A	Exercise 7: establishing a connection		2		50	In class
Total Week 7		3	2	5.2	50	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	Multi-threading. Template basics. The Standard Template Library	3				
HW 8A	Read chapter 14 (42 pages). Evalutaed in project 5			4.2		
LAB 8A	Exercise 8: Launching threads		2		50	In class
HW 8B	Project 5: C++ wrapper classes			5	100	Week 9
Total Week 8		3	2	9.2	150	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 9A	Final project discussion	2				
LAB 9A	Exercise 9: project organization, applying conventions		3		50	In class
HW 9A	Project 6: One-armed bandit			8	100	Week 10
Total Week 9		2	3	8	150	
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 10A	Course wrap-up, project reviews	5				
Total Week 10		5	0	0	0	

## Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1		3	2	8.4
2		3	2	10.8
3		3	2	20
4		3	2	7.8
5		3	2	16.7
6		2	3	12
7		3	2	5.2
8		3	2	9.2
9		2	3	8
10		5	0	0
Total		30	20	98.1

## Table/Point Breakdown

Assignment Type	Possible Points	Percentage of Grade
Projects	550	55%

Exercises	450	45%
Total	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](mailto: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.