WEBSTER UNIVERSITY • WEBSTER GROVES, MO • GEORGE HERBERT WALKER SCHOOL OF BUSINESS & TECHNOLOGY • MATHEMATICS/COMPUTER SCIENCE

COMPUTER PROGRAMMING II

COSC-1560

FA 2017   Section 03   3 Credits   08/28/2017 to 12/22/2017

Modified 08/19/2017

MEETING TIMES

Lecture/lab

Thursday, 5:30 PM to 8:30 PM, EAB 208

CONTACT INFORMATION

Dr. Martha Smith

Email: smithma@webster.edu (mailto:smithma@webster.edu)
Office: EAB 362
Phone: 314-246-7678
Office hours by appointment. Email is the best way to contact me.

DESCRIPTION

This course uses the C++ language to introduce students to programming concepts such as abstract data types, use of classes and objects, pointers, and advanced file operations. May be repeated once for credit. Only offered in 16-week format.

Requisites

COSC 1550 with grade of B- or better

OUTCOMES

At the completion of this course this student will be able to:

- Write programs in the C++ programming language using arrays, pointers, structured data, and file operations
- Analyze problems and design programming solutions for these situations
- Write programs using the Department Style Guidelines
- Use pointer variables, understand the relationship between arrays and pointers, do pointer arithmetic, and use pointers as parameters
- Use the character macros available in cctype and the cstring functions available in string
- Declare, initialize, and process the abstract data type, struct, including the use of arrays of structures, structures in functions, and pointers to structures
- Write code to read and write to text and binary files
- Declare a class with public and private members and functions
- Use class constructors and destructors

REQUIRED TEXTBOOK

Starting Out with C++ from Control Structures through Objects, Brief Version◆

Author: Gaddis
Publisher: Addison-Wesley (Pearson)
Edition: 8th
ISBN: 978-0134037325

DELIVERABLES

Weekly Assignments

Assignment details will be given out in class and will also be available through WorldClassroom. All assignments will be due at midnight before the next class period. You will submit your assignment online using file upload.

Quizzes

Quizzes will be administered through WorldClassroom. These will be timed and will are due by 5:00 pm the next class period. They will go "live" on the Sunday before the next class period.

Exams

There will be an "in-class" exam every four weeks. The last will be the final exam.

EVALUATION

Criteria

This course will be evaluated on programming assignments, midterm exams, quizzes, a final exam, and class participation.

Breakdown

- Exams (3) 35%
- Final Exam 25%
- Programming Assignments 20%
- Quizzes 10%
- Class Participation 10%

SCHEDULE

When	Topic	Notes
Week 1 (8/31)	Review of Programming I Concepts	Focus on arrays and 2D arrays In-class online assessment
Week 2 (9/7)	Abstract Data Types (ADTs), Structures, Initializing structures, Arrays of structures, Nested structures	Quiz 1 (take prior to week 2 class)
Week 3 (9/14)	Structures as function arguments, Returning a structure from a function, ADTs and object-oriented programming	Quiz 2 (take prior to week 3 class)
Week 4 (9/21)	Introduction to Classes, OO programming, public and private members, methods	** EXAM 1
Week 5 (9/28)	More on classes, intro to multi-file projects, header files (.h), source files (.cpp)	Quiz 3 (take prior to week 5 class)
Week 6 (10/5)	Constructors and destructors, more with files	Quiz 4 (take prior to week 6 class)
Week 7 (10/12)	Chapter 14: More About Classes Private data members, etc.	Quiz 5 (take prior to week 7 class)

When	Topic	Notes
Week 8 (10/19)	Pointers: Getting the address of a variable, pointer arithmetic, initializing pointers	** EXAM 2
Week 9 (11/2)	Pointers continued: Dynamic memory allocation	Quiz 6 (take prior to week 9 class)
Week 10 (11/9)	Pointers and Classes: The "this" pointer, constant member functions, static member functions	Quiz 7 (take prior to week 10 class)
Week 11 (11/16)	Processing c-strings, processing characters, processing character arrays, using pointers with character arrays	Quiz 8 (take prior to week 11 class)
Week 12 (11/23)	Thanksgiving Holiday - NO CLASS	
Week 13 (11/30)	Working with Binary Files	**Exam 3
Week 14 (12/7)	Binary files Intro to string class, string class functions	Quiz 9 (take prior to week 14 class)
Week 15 (12/14)	Review	
Week 16 (12/21)	Finals Week	** FINAL EXAM

COURSE POLICIES

Exams, Quizzes & Assignments

Programming assignments are your opportunity to apply what you have learned and get specific feedback from me. Remember, the goal in this course is for you to learn more advanced programming concepts and to successfully incorporate these concepts in code. Each student will be required to submit each programming assignment during the semester.

Programming assignments will be graded on the following:

- code
- logic
- program compilation
- program output
- program requirements

Quizzes will be taken online and will help to reinforce concepts covered in class.

The three (3) **exams** will cover material that we have learned in class and have practiced through the programming assignments.

The **final exam** will be comprehensive.

Late Work

ALL late work will receive at least a grade deduction. It is suggested that you stay up to date on assignments because there are times when an assignment will be a continuation of previous assignment or reuse a component of previous assignment.

Missing Class

Please email me if you will be missing class. If you miss more than **TWO** consecutive classes and I have not heard from you I will most likely contact your academic advisor. It is your responsibility to **DROP** or **WITHDRAW** from the course if you plan on not attending. I will not do this for you.

Undergraduate Grades

Please review the guidelines and grading options in the UNDERGRADUATE catalog available on the Webster University website.

Class Participation

Class participation includes asking questions, paying attention, taking notes and coming to class each class period. I **ENCOURAGE** all students to ask questions during class. I also suggest **TAKING NOTES BY HAND**. I draw a lot on the board. This is hard to replicate.

Students in the class have the right to learn in an environment that does not contain distractions.

PHONES SHOULD NOT BE SEEN OR HEARD DURING CLASS!

INSTITUTIONAL POLICIES

Academic Policies

Academic policies provide students with important rights and responsibilities. Students are expected to familiarize themselves with all academic policies that apply to them. Academic

policies for undergraduate students can be found in the Undergraduate Studies Catalog; graduate students should review the Graduate Studies Catalog.

Undergraduate Studies Catalog

The Undergraduate Studies Catalog contains academic policies that apply to all undergraduate students. The *academic policies and information* section of the catalog contains important information related to **attendance, conduct, academic honesty, grades, and more**. If you are an undergraduate student, please review the catalog each academic year. The current Undergraduate Studies Catalog is at:

> http://www.webster.edu/catalog/current/undergraduate-catalog/ (http://www.webster.edu /catalog/current/undergraduate-catalog/)

Graduate Studies Catalog

The Graduate Studies Catalog contains academic policies that apply to all graduate students. The *academic policies* section of the catalog contains important information related to **conduct, academic honesty, grades, and more**. If you are a graduate student, please review the catalog each academic year. The current Graduate Studies Catalog is at:

> http://www.webster.edu/catalog/current/graduate-catalog/ (http://www.webster.edu/catalog /current/graduate-catalog/)

Grading

The Grades section of the academic catalog outlines the various grading systems courses may use, including the information about the final grade reported for this class.

> *Undergraduate*
> http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html#grading (http://www.webster.edu/catalog/current/undergraduate-catalog /academic-policies.html#grading)

> *Graduate*
> http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html#grades (http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html#grades)

Incomplete

There are important policies that govern grades of Incomplete (I), including the circumstances under which Incomplete grades are granted, deadlines for completion, and consequences should the remaining course work not be completed. It is the responsibility of a student who requests an Incomplete to ensure that he/she understands and follows the policies.

Grade Appeals

Instructors are responsible for assigning grades, and student should discuss grade issues with the instructor. Policies and procedures for appealing grades are available in the appropriate catalog.

Academic Honesty Policy

Webster University is committed to academic excellence. As part of our Statement of Ethics, we strive to preserve academic honor and integrity by repudiating all forms of academic and intellectual dishonesty, including cheating, plagiarism and all other forms of academic dishonesty. Academic dishonesty is unacceptable and is subject to a disciplinary response. Students are encouraged to talk to instructors about any questions they may have regarding how to properly credit others' work, including paraphrasing, quoting, and citation formatting. The university reserves the right to utilize electronic databases, such as Turnitin.com, to assist faculty and students with their academic work.

The University's Academic Honesty Policy is published in academic catalogs:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html (http://www.webster.edu/catalog/current/undergraduate-catalog/academic-policies.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html (http://www.webster.edu/catalog/current/graduate-catalog/academic-policies.html)

As a part of the University commitment to academic excellence, the Academic Resource Center provides student resources to become better acquainted with academic honesty and the tools to prevent plagiarism in its many forms:

http://www.webster.edu/arc/plagiarism_prevention/ (http://www.webster.edu /arc/plagiarism_prevention/)

Statement of Ethics

Webster University strives to be a center of academic excellence. The University makes every effort to ensure the following:

- The opportunity for students to learn and inquire freely
- The protection of intellectual freedom and the rights of professors to teach
- The advancement of knowledge through scholarly pursuits and relevant dialogue

To review Webster University's statement of ethics, see the Undergraduate Studies Catalog and the Graduate and Studies Catalog:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/overview.html#ethics (http://www.webster.edu/catalog/current/undergraduate-catalog/overview.html#ethics)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/ethics.html (http://www.webster.edu/catalog/current/graduate-catalog/ethics.html)

Contact Hours for this Course

It is essential that all classes meet for the full instructional time as scheduled. A class cannot be shortened in length. If a class session is cancelled for any reason, the content must be covered at another time.

Important Academic Resources

Academic Accommodations

Webster University makes every effort to accommodate individuals with academic/learning, health, physical and psychological disabilities. To obtain accommodations, students must identify themselves and provide documentation from a qualified professional or agency to the appropriate campus designee or the Academic ADA Coordinator at the main campus. The Academic ADA Coordinator may be reached at 314-246-7700 or disability@webster.edu (mailto:disability@webster.edu).

If you have already identified as a student with a documented disability and are entitled to classroom or testing accommodations, please inform the instructor of the accommodations you will require for this class at the beginning of the course.

Academic Resource Center

Additional support and resources may be accessed through the Academic Resource Center (ARC). Support and resources include academic counseling, accommodations, assistive technology, peer tutoring, plagiarism prevention, testing center services, and writing coaching. Visit www.webster.edu/arc (http://www.webster.edu/arc) or Loretto Hall 40 on the main campus for more information.

University Library

Webster University Library is dedicated to supporting the research needs and intellectual pursuits of students throughout the University's worldwide network. Resources include print and electronic books, journal articles, online databases, DVDs and streaming video, CDs and streaming music, datasets, and other specialized information. Services include providing materials at no cost and research help for basic questions to in-depth exploration of resources. The gateway to all of these resources and services is http://library.webster.edu (http://library.webster.edu/). For support navigating the library's resources, see http://libanswers.webster.edu/ (http://libanswers.webster.edu/) for the many ways to contact library staff.

Drops and Withdrawals

Drop and withdrawal policies dictate processes for students who wish to unenroll from a course. Students must take proactive steps to unenroll; informing the instructor is not sufficient, nor is failing to attend. In the early days of the term or semester, students may DROP a course with no notation on their student record. After the DROP deadline, students may WITHDRAW

from a course; in the case of a WITHDRAW, a grade of W appears on the student record. After the WITHDRAW deadline, students may not unenroll from a course. Policies and a calendar of deadlines for DROP and WITHDRAW are at:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/enrollment.html (http://www.webster.edu/catalog/current/undergraduate-catalog/enrollment.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/enrollment.html (http://www.webster.edu/catalog/current/graduate-catalog/enrollment.html)

Academic Calendar - http://www.webster.edu/academics/academic-calendar/ (http://www.webster.edu/academics/academic-calendar/)

Current tuition rates, policies, and procedures, including details of pro-rated tuition refunds, are available in the "Tuition, Fees, and Refunds" section of Webster's Academic Catalogs:

Undergraduate
http://www.webster.edu/catalog/current/undergraduate-catalog/tuition.html (http://www.webster.edu/catalog/current/undergraduate-catalog/tuition.html)

Graduate
http://www.webster.edu/catalog/current/graduate-catalog/tuition.html (http://www.webster.edu/catalog/current/graduate-catalog/tuition.html)

Student Handbook and Other Important Policies

Student handbook and other non-academic policies may apply to you and may impact your experience in this class. Such policies include the student code of conduct, privacy, technology and communications, and more. Please review the handbook each year and be aware of policies that apply to you. The handbook is available at:

http://www.webster.edu/student-handbook/ (http://www.webster.edu/student-handbook/)

Sexual Assault, Harassment, and Other Sexual Offenses

Webster University makes every effort to educate the community to prevent sexual assault, harassment, and other sexual offenses from occurring, and is committed to providing support to those affected when this behavior does occur. To access information and resources or to review the Policy on Sexual Assault, Harassment, and Other Sexual Offenses, visit:

http://www.webster.edu/sexual-misconduct/ (http://www.webster.edu/sexual-misconduct/)

Research on Human Subjects

The Webster University Institutional Review Committee (IRB) is responsible for the review of all research on human subjects. The IRB process applies to all Webster University faculty, staff, and students and must be completed prior to any contact with human subjects. For more information on the IRB, visit:

http://www.webster.edu/irb/index.html (http://www.webster.edu/irb/index.html)

Course Evaluations

At the end of this course, you will have the opportunity to provide feedback about your experience. Your input is extremely valuable to the university, your instructor, and the department that offers this course. Please provide your honest and thoughtful evaluation, as it helps the university to provide the best experience possible for all of its students.

Important Technology Information

Connections Accounts

Webster University provides all students, faculty, and staff with a University email account through Connections. Students are expected to activate their Connections account and regularly check incoming University email. Students may choose to have their University email forwarded to an alternate email address. Connections account holders can call the Help Desk (314-246-5995 or toll free at 1-866-435-7270) for assistance with this setup. Instructions are also provided on the Information Technology website at:

http://www.webster.edu/technology/service-desk/ (http://www.webster.edu/technology/service-desk/)

WorldClassRoom

WorldClassRoom is Webster's Learning Content Management System (LMS). Your instructor may use WorldClassRoom to deliver important information, to hold class activities, to communicate grades and feedback, and more. WorldClassRoom is available using your Connections ID at:

https://worldclassroom.webster.edu/ (https://worldclassroom.webster.edu/)

Webster Alerts

Webster Alerts is the University's preferred emergency mass notification service, available free to current students, faculty and staff at all US campuses. By registering a valid cell phone number and email address, you will receive urgent campus text, voice mail and email communications. Valuable information concerning a range of incidents affecting you - from weather-related campus closures, class delays and cancellations, to more serious or life-threatening events - are immediately and simultaneously delivered through multiple communication channels. To register for Webster Alerts, visit:

http://www.webster.edu/technology/services/webster-alerts/ (http://www.webster.edu/technology/services/webster-alerts/)

CAMPUS INFORMATION