Florida Atlantic University
Computer and Electrical Engineering and Computer Science
COP 3530 Data Structure and Algorithm Analysis
Fall 2016
3 Credit Hours

Instructor: Lofton Bullard
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Office Hours: Wednesdays: 2:00PM-5:00PM & Thursdays: 9:00AM-12:00PM
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Program Admin:

Course Prerequisites: COP 3014 (with "C" or better), COP 3014L

Course Corequisites: MAD 2014 (may be taken before COP3530)

Placement in Program: Upper division programming course.
Other Designations: Must be completed with grade of "C" or higher to fulfill computer science and computer engineering core requirement.

Course Description

The design, implementation and run-time analysis of important data structures and algorithms. The data structures considered include sorted arrays, linked lists, stacks, queues, and trees. An approach based on abstract data types and classes will be emphasized. The use of recursion for algorithm design. Class design and implementation in C++. Programming assignments in the C++ language.

Required Text and Materials

 ADT, Data Structures and Problem Solving with C++, ISBN0-13-140909-3, Larry Nyhoff, 2nd Edition, Copyright 2005

Microsoft Visual Studio 2013 C++ Compiler

Computer Requirements

- Operating System
    - A computer that can run Mac OSX or Win XP or higher

- Peripherals
    - A backup option should be available to minimize the loss of work. This can be an external hard drive, a USB drive, cloud storage, or your folder on the FAU servers.
    - A webcam,

- Software
    - Please visit the Students tab in Blackboard located at the top of each Blackboard page for LMS compatibility with your computer. Make sure your Internet browser is compatible and that you have all the recommended plug-ins installed.

o   Other software may be required for specific learning units and/or modules, but the links to download and install it will be provided within the applicable unit and/or module. You may also need headphones with a microphone for Blackboard Collaborate sessions.

Required Technical Skills

To be successful in this course you should be familiar with and be able to execute the following technological skills:

- Compile a program using Microsoft visual studio C++ compiler
- Creating and posting to a discussion board, blog, or Wiki
- Taking a test through Blackboard
- Attaching documents
- Copy and paste functions
- Microsoft Office tools: Word, PowerPoint, Excel
- Searching the FAU library and websites

Course Objectives/Student Learning Outcomes

Upon successful completion of this course, students will be able to:
1. Demonstrate the ability to produce correct code;
2. Demonstrate the ability to produce clear and well-structured code;
3. Demonstrate the ability to produce code that is space and time efficient;
4. Demonstrate the ability to choose and implement data structures;
5. Demonstrate understanding of the entire software life cycle including design, implementation, testing, maintenance, and documentation;
6. Demonstrate understanding of the overall structure of an operating system, and the data structures and programming constructs used in operating systems.

Assessments for this course include:

Programming Assignments: 25%

Throughout the semester you will be given several programming assignments based on the topics covered in the lectures and textbook to complete.

Course Examinations: 75%

- Examinations will be based on readings, quizzes, and assignments..
- The exams will include multiple choice, true/false and/or short answer questions.
- Answers will be evaluated based on content in terms of accuracy of information and ability to analyze the issues. Good answers will demonstrate that you have read and understood the chapters, and completed assignments
- Exams will be taken online in the Blackboard Learning Management System. Test will be timed.
- No make-up exams are given

Your final grade will be based on the following weighted distribution:

Exam #1	25%	250
Exam #2	25%	250
Programming Assignments	25%	250
Final Exam	25%	250

Grade Scale:

If the instructor opts to implement a unique course grading scale or curve, it must be stated in the syllabus.

total points	1000-930	929-900	899-870	869-830	829-800	799-770	769-730	729-700	699-670	669-630	629-600	<600
grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Course Schedule

You can find a copy of the Course Schedule posted on Blackboard

Makeup Test, Late Work, and Incomplete Policy

Late Assignments Policy: Late work is not acceptable. Ample time is given for all coursework. Any exceptions must be granted by me in advance of a deadline. Requests for exceptions must be submitted at least two (2) business days prior to the deadline in question. Submission does not guarantee an exception will be granted.

Make up Policy for Tests:

Makeup tests are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam. Requests for Make-up exam must occur either prior to missing the exam or no later than 24 hours after the occurrence of the incident. Makeup exam should be administered and proctored by department personnel unless there are other pre-approved arrangements. If unable to meet the make-up deadline, other accommodations may be made on a case by case basis.

Classroom Etiquette Policy/Netiquette

Due to the casual communication common in the online environment, students are sometimes tempted to relax their grammar, spelling, and/or professionalism; however, remember you are adult students and professionals—your communication should be appropriate. You are expected to use correct spelling and grammar and write in complete sentences. Also, please note that in the online environment you do not have the advantage of voice inflection or gestures. As a result, sarcasm can come across very negative, so this form of communication should be avoided. When conducting peer reviews or responding to classmates' posts, remember that you are responding to the ideas of the writer: keep your communication professional and on-topic.

Communication Policy

- Announcements
  - You are responsible for reading all announcements posted by the instructor. Check the course announcements each time you login to be sure you have read all of them since your last login session.

- Course-related Questions
  - Post course-related questions to the FAQ discussion board. Asking course-related questions in this way allows other participants with the same question to benefit from the responses. Also, make sure you review this forum prior to posting a question; it may have already been asked and answered in previous posts. Except Saturdays, Sundays, and holidays, questions will, generally, be answered by instructors within 48 hours.

- Email Policy
  - Except for Saturdays, Sundays, and holidays, instructor typically, will respond to messages within 48 hours. Such messages should only be used to communicate personal or confidential matters; otherwise, please use the FAQ discussion board within the course.

- Assignment Feedback Policy
  - Feedback will be provided on submitted assignments within one week of the submission date. Programming assignments may require a longer review period, which will be communicated to you by your instructor and will provide feedback as quickly as possible.

Technical Problem Resolution Procedure

In the online environment, there is always a possibility of technical issues (e.g., lost connection, hardware or software failure). Many of these can be resolved relatively quickly, but if you wait until the last minute before due dates, the chances of these glitches affecting your success are greatly increased. Please plan appropriately. If a problem occurs, it is essential you take immediate action to document the issue so your instructor can verify and take appropriate action to resolve the problem. Please take the following steps when a problem occurs:

1. Complete a Help Desk ticket http://helpdesk.fau.edu/. Make sure you complete the form entirely and give a full description of your problem so the Help Desk staff will have the pertinent information in order to assist you properly. This includes:
   a. Select "Blackboard (Student)" for the Ticket Type.
   b. Input the Course ID.
   c. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
   d. Attach the Print Screen file, if available.
2. Send a message within Blackboard to your instructor to notify him/her of the problem. Include all pertinent information of the incident (1b-d above).
3. If you do not have access to Blackboard, send an email to your instructor with all pertinent information of the incident (1b-d above).
4. If you do not have access to a computer, call your instructor with all pertinent information of the incident. If he/she is not available, make sure you leave a detailed message.

5. If you do not hear back from the Help Desk or your instructor within a timely manner (48 hours), it is your responsibility to follow up with the appropriate person until a resolution is obtained.

Selected University and College Policies

Disability Policy Statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton SU 133 (561-297-3880), in Davie - LA 240 (954-236-1657), in Jupiter - SR 110 (561-799-8585) and follow all OSD procedures. http://osd.fau.edu/

Code of Academic Integrity Policy Statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

Plagiarism is unacceptable in the University community. Academic work that is submitted by students is assumed to be the result of their own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they are expected to acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass-off such work as one's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized. This includes all discussion board posts, journal entries, wikis, and other written and oral presentation assignments. If in doubt, cite your source!

Religious Accommodation Policy Statement

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments. For further information, please see Academic Policies and Regulations.

University Approved Absence Policy Statement

In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student's responsibility to notify the course instructor at least one week prior to missing any course assignment.

Incomplete Grade Policy Statement

A student who is passing a course, but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor, but is allowed only if the student is passing the course.

The specific time required to make up an incomplete grade is at the discretion of the instructor. However, the College of Business policy on the resolution of incomplete grades requires that all work required to satisfy an incomplete ("I") grade must be completed within a period of time not exceeding one calendar year from the assignment of the incomplete grade. After one calendar year, the incomplete grade automatically becomes a failing ("F") grade.

Withdrawals

Any student who decides to drop is responsible for completing the proper paper work required to withdraw from the course. It is possible that this course is electronically linked to another course you may be enrolled in. If that is the case, you may need to contact an academic advisor to remove the link so that you can withdraw. This may require a day or two so do not wait to withdraw at the last minute. A late withdrawal will require a petition and may not be approved. Please check the online academic calendar for withdrawal deadlines.

Grade Appeal Process

A student may request a review of the final course grade when s/he believes that one of the following conditions apply:
- There was a computational or recording error in the grading.
- Non-academic criteria were applied in the grading process.
- There was a gross violation of the instructor's own grading system.
- The procedures for a grade appeal may be found in Chapter 4 of the University Regulations.

Disruptive Behavior Policy Statement

Disruptive behavior is defined in the FAU Student Code of Conduct as *"... activities which interfere with the educational mission within classroom."* Students who behave in the face-to-face and/or virtual classroom such that the educational experiences of other students and/or the instructor's course objectives are disrupted are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include, but is not limited to: non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

Support Services and Resources

Office of Information Technology Online Help Desk:	**http://helpdesk.fau.edu**
FAU Ombuds (Ask a question about University related issues)	**Twitter @FAUOmbuds** **ombuds@fau.edu**
Academic Advising Services:	**http://www.fau.edu/freshmanadvising**
FAU Libraries Website:	**http://www.fau.edu/library**
Center for Learning and Student Success Website:	**http://www.fau.edu/class**
University Center for Excellence in Writing:	**http://www.fau.edu/UCEW**
Math Learning Center:	**http://www.math.fau.edu/MLC**
Office of Undergraduate Research and Inquiry:	**http://www.fau.edu/ouri**
Office for Students with Disabilities Website:	**http://osd.fau.edu/**
Office of International Programs and Study-abroad:	**www.fau.edu/goabroad**

Faculty Rights and Responsibilities

Florida Atlantic University respects the right of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards
- To establish and enforce reasonable behavior standards in each class
- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the *Student Code of Conduct*.

Instructor reserves the right to adjust this syllabus as necessary.