

Data Structure and Algorithm Analysis Course Syllabus

1. Course title/number, number of credit hours	
Data Structure and Algorithm Analysis COP 3530	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: COP3014: Foundations of Computer Science (or equivalent or permission of Instructor) Corequisite: MAD2104: Discrete Math (or equivalent or permission of Instructor)	
3. Course logistics	
<i>Term:</i> Spring 2016 <i>Class location and time:</i> Online Lectures and FL 401, Tuesdays and Thursdays: 11:30 ~ 13:05.	
4. Instructor contact information	
<i>Instructor's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	Mehrdad Nojournian EE96, Room 530 Tuesdays and Thursdays: 01:00 to 03:00. 561.297.3411 mnojournian@fau.edu
5. TA contact information	
<i>TA's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	
6. Course description	
This course is an advanced programming class with an introduction to the field of data structures and the analysis of algorithms using the C++ programming language. The course will cover the use of various data structures and abstract data types in the design and implementation of computer programs.	
7. Course objectives/student learning outcomes/program outcomes	
<i>Course objectives</i>	The primary objective of this course is to provide an advanced understanding of object oriented C++ programming. Including the development of data structures including Linked Lists, Stacks, Queues, Trees, Graphs, and Hash Tables.
<i>Student learning outcomes & relationship to ABET a-k objectives</i>	1. Proficiency in the areas of software design and development, data structures, and operating systems 2. An ability to plan and execute engineering design to meet an identified need.
8. Course evaluation method	
Subject to changes: Participation: Bonus up to 10% Homework: 10% Midterm Exam 40% Final Exam: 50%	Note: The minimum grade required to pass the course is C.

**Data Structure and Algorithm Analysis
Course Syllabus**

9. Course grading scale
Grading Scale: 90 and above: "A", 87-89: "A-", 83-86: "B+", 80-82: "B", 77-79: "B-", 73-76: "C+", 70-72: "C", 67-69: "C-", 63-66: "D+", 60-62: "D", 51-59: "D-", 50 and below: "F." <i>Note:</i> The minimum grade required to pass the course is D.
10. Policy on makeup tests, late work, and incompletes
All assignments are due at 11:00 am on the due date. Late assignments will lose 10% of the total points for each day they are late and they will not be accepted after three days. However, appropriate accommodations will be made for students having a valid medical excuse. Unless there exists an evidence of medical or emergency situation, incomplete grades will not be given. Plagiarism will not be tolerated. Any copying and pasting without attribution and a reference will be considered plagiarism.
11. Special course requirements
N/A
12. Classroom etiquette policy
University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.
13. Disability policy statement
In compliance with the Americans with Disabilities Act, 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 campus, SU 133 (561) 297-3880 and follow all OSD procedures.
14. Honor code policy
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 unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf
15. Required texts/reading
Larry Nyhoff, ADT, Data Structures and Problem Solving with C++, Pearson Prentice Hall, 2005.
16. Supplementary/recommended readings
TBD

Data Structure and Algorithm Analysis
Course Syllabus

17. Course topical outline, including dates for exams/quizzes, papers, completion of reading

Subject to Changes:

Algorithms

Growth of Functions

Complexity of Algorithms

Recursive Algorithms

Comprehensive Review of C++

Abstract Data Types

Static Arrays, Multidimensional Arrays and Dynamic Arrays

Lists and Array-Based Implementation of Lists

Linked Lists and Pointer-Based Implementation of Linked Lists

Stacks and Linked Stacks

Queues and Linked Queues

Binary Trees and Hash Tables

Sorting: Heap Sort, Quick Sort and Merge Sort

Graphs and Digraphs