FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Electrical Engineering and Comp Science

College Engineering & Computer Science

UUPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	COP 3530	***Current* Course Title**	Data Structures and Algorithm Analysis

*Syllabus must be attached for **ANY** changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.*

Change title to:

Change prefix
From: **To:**

Change course number
From: **To:**

Change credits*
From: **To:**

Change grading
From: **To:**

Change WAC/Gordon Rule status**
Add ☐ **Remove** ☐

Change General Education Requirements***
Add ☐ **Remove** ☐

*Review Provost Memorandum
**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.
***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.

Change description to:

Change prerequisites/minimum grades to:

Change corequisites to:
COP 3503

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes:	Summer 2022	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Hanqi Zhuang, zhuang@fau.edu, 561-297-3413

Approved by	***Date***
Department Chair	4/22/2022
College Curriculum Chair Hongbo Su	
College Dean	5/2/22
UUPC Chair	
Undergraduate Studies Dean	
UFS President	
Provost	

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

Department of Electrical Engineering and Computer Science
Florida Atlantic University
Course Syllabus

1. Course title/number, number of credit hours	
Data Structures and Algorithm Analysis – COP 3530	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: COP 2220 AND (COT 2000 OR MAD 2014) with a "C" or better Corequisite: COP 3503	
3. Course logistics	
Term: TBD *Class location and time:*	
4. Instructor contact information	
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBD
5. TA contact information	
TA's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBD
6. 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.	
7. Course objectives/student learning outcomes/program outcomes	
Course objectives	The course will provide a good understanding of Abstract Data Types, commonly used data structures such as stack, list, queue, tree, and hash tables, and their implementation in C++. The student will also learn good programming principles and proper use of the C++ language. The material learned in this course is fundamental for the computer science and computer engineering programs. The programming assignments will provide valuable experience with programming in C++, designing classes, implementation, testing and debugging.
Student learning outcomes & relationship to ABET 1-7 outcomes	a. Correctness of code. b. Clarity of code and program structure. c. Space and time efficiency of code d. Demonstrates ability to choose and implement data structures.

8. Course evaluation method

Homework (5 total, 15% each)	75%	*Note*: The minimum grade required to pass the course is C.
Final paper	25%	

9. Course grading scale

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
[90-100]	[87-90)	[83-87)	[80-83)	[77-80)	[73-77)	[70-73)	[67-70)	[63-67)	[60-63)	[51-60)	[0-51)

10. Policy on makeup tests, late work, and incompletes

Late Assignments Policy –

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.

Incomplete Grade Policy Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation and the student is currently passing the class, incomplete grades will not be given.

11. Special course requirements

N/A

12. Classroom etiquette policy

To enhance and maintain a productive atmosphere for learning, personal communication devices such as cell phones are to be disabled during class sessions.

13. Attendance policy statement

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. After two full weeks of face-to-face instruction with consecutive 'no show' of any students in person in the classroom, the modality of this course section may be changed to remote instruction only at the discretion of the university.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final grade as a direct result of such absence.

14. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student

Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

15. Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/.

16. 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.

17. Required texts/reading

Textbooks:

Grokking Algorithms, by Aditya Y. Bhargava -- Manning 2016 ISBN 9781617292231

and

Open Data Structures: an introduction, by Pat Morin: https://opendatastructures.org (FREE)

18. Supplementary/recommended readings

TBD

19. Course topical outline (and associated readings)

- Fundamental Data Structures and Algorithms
- Linked lists
- Stacks
- Queues
- Sets
- Graphs
- Trees
- Hash Tables
- Heaps and Priority Queues
- Parallel Data Structures

- Algorithmic Strategies
    - Algorithm efficiency: growth rates and big-O notation
    - Searching: comparison of various algorithms
    - Sorting: comparison of various algorithms