NEW COURSE PROPOSAL
Undergraduate Programs

FLORIDA ATLANTIC UNIVERSITY

Department Computer and Elctrical Eng and Computer Science

College Engineering and Computer Science

(*To obtain a course number, contact **erudolph@fau.edu***)

UUPC Approval _____

UFS Approval _____

SCNS Submittal _____

Confirmed _____

Banner Posted _____

Catalog _____

Prefix COP **Number** 3043	*(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)* **Lab Code**	**Type of Course** Lecture	**Course Title** Data Structures and Algorithm Analysis with Python

Credits (*Review Provost Memorandum*)

3

Effective Date (*TERM & YEAR*)

Spring 2021

Grading (Select One Option)

Regular ◉

Pass/Fail ○

Sat/UnSat ○

Course Description (*Syllabus must be attached; Syllabus Checklist recommended; see Guidelines*)

This course is an advanced programming class that covers data structures and algorithm analysis using the Python programming language. The course covers various data structures (including arrays, linked lists, stacks, queues, trees) and abstract data types in the design and implementation of computer programs.

Prerequisites, with minimum grade*	**Corequisites**	**Registration Controls** (*Major, College, Level*)
COP 2035 Introduction to Programming in Python with minimum grade of "C"		None

*Default minimum passing grade is D-. Prereqs., Coreqs. & Reg. Controls are enforced for all sections of course

WAC/Gordon Rule Course

Type text here

○ Yes ◉ No

WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to proposal. See WAC Guidelines.

Intellectual Foundations Program (General Education) Requirement (*Select One Option*)

None

General Education criteria must be indicated in the syllabus and approval attached to the proposal. See GE Guidelines.

Minimum qualifications to teach course

PhD in Computer Science/Computer Engineering/Electrical Engineering or another related field

Faculty Contact/Email/Phone	**List/Attach comments from departments affected by new course**
Hanqi Zhunag/Zhuang@fau.edu/561.297.3413	NA

Approved by

Department Chair _Hanqi Zhuang_
Digitally signed by Hanqi Zhuang
DN: cn=Hanqi Zhuang, o=FAU, ou=CEECS, email=zhuang@fau.edu, c=US
Date: 2020.06.19 16:38:31 -04'00'

College Curriculum Chair _Dan Meeroff_

College Dean _____

UUPC Chair _Jerry Haky_

Undergraduate Studies Dean _Edward Pratt_

UFS President _____

Provost _____

Date

6/19/2020

9-3-20

9/4/20

9-15-20

9-15-20

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

1. Course title/number, number of credit hours		
COP 3043 Data Structures and Algorithm Analysis with Python	3 credit hours	

2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: COP 2035 Introduction to Programming in Python with minimum grade of "C"	

3. Course logistics	
Term: Spring 2021	

4. Instructor contact information		
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBA	

5. TA contact information		
TA's name *Office address* *Office Hours* *Contact telephone number* *Email address*	TBA	

6. Course description	
This course is an advanced programming class that covers data structures and algorithm analysis using the Python programming language. The course covers various data structures (including arrays, linked lists, stacks, queues, trees) and abstract data types in the design and implementation of computer programs.	

7. Course objectives/student learning outcomes/program outcomes	
Course objectives	The primary objective of this course is to provide an advanced understanding of object oriented Python programming. Including the development of data structures including Linked Lists, Stacks, Queues, Trees, Graphs, and Hash Tables.
Student learning outcomes & relationship to ABET 1-7 outcomes	1. An Ability to identify, formulate, and solve complex computing/engineering problems by applying principles of computing, engineering, science, and mathematics. 6. An ability to apply engineering/computer science theory and hardware/software development fundamentals to develop and conduct appropriate experimentation, analyze and interpret data, and use computing/engineering judgment produce engineering/computing-based solutions/conclusions.

8. Course evaluation method
(subject to change)

Homeworks:	30%	**Note:** The minimum grade required to pass the course is C.
Exams:	70%	

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."

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

All assignments are due at 11:59 pm 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. 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.

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 course 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. If your college has particular policies relating to cheating and plagiarism, state so here or provide a link to the full policy—but be sure the college policy does not conflict with the University Regulation.

17. Required texts/reading

Michael T. Goodrich, Data Structures and Algorithms in Python, Wiley, ISBN: 9781118290279, 1118290275

18. Supplementary/recommended readings

Lecture materials

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

Subject to Changes:

1. Introduction
2. Review of Python concepts
3. Algorithm Analysis
4. Recursion
5. Array-Based Sequences
6. Stacks, Queues, and Deques
7. Linked Lists and Trees
8. Priority Queues
9. Maps, Hash Tables, and Skip Lists
10. Search Trees
11. Sorting and Selection
12. Graphs