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

1. Course title/number, number of credit hours

COP 4930 – Python Programming	3 credit hours

2. Course prerequisites, corequisites, and where the course fits in the program of study

Prerequisites: COP 3530 Data Structures and Algorithm Analysis

3. Course logistics

Term: Spring 2017
Lecture time and place: Tue & Thu, 8 AM – 9:20 AM, FL 427

This is a classroom lecture course with an online section.
Attendance is mandatory for students registered for the live section.

All course material and assignments are handled using Canvas, at http://canvas.fau.edu.

4. Instructor contact information

Instructor's name *Office address*	Dr. Ionut Cardei EE 419
Contact telephone number *Email address*	561-297-3401 (only during office hours) icardei@fau.edu [email is preferred]
Office hours:	Tue. & Thu. 9:30 AM – 11 AM, in room EE 419

5. Communication Policy

The preferred mode of communication for private messages to the instructor is using Canvas's Message tool. For questions or concerns related to the course, please check first the "Class Q&A" Discussion Board on Canvas. Expect answers within 48 hours from posting. For private messages sent via Canvas expect a reply within 24 hours, excluding the weekend period or holidays. For more urgent communication, contact the instructor via regular email from your FAU email account.

6. Course description

This class is an introduction to the Python programming language, with applications to practical problem solving involving data manipulation and analysis. The first part of the class focuses on teaching the basics of the Python language. Topics covered are data structures (lists, arrays, dictionaries, sets, comprehensions), functions, files, and object-oriented language elements. In the second part of the course students learn to apply advanced language features and methodologies in combination with third-party libraries for scientific computation to develop real-world applications.

7. Course objectives/student learning outcomes/program outcomes

Student learning outcomes & relationship to ABET a-i objectives (computing programs)	**ABET Outcomes:** (a) An ability to apply knowledge of computing and mathematics appropriate to the discipline (b) An ability to apply design and development principles in

conducting experiments, analyzing results, and construction of hardware or software systems of varying complexity.

(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

(i) An ability to use current techniques, skills, and tools necessary for computing practice.

Learning Objectives

1. demonstrate and apply programming methods using the Python programming language (a,b,c,d,e,f,i)
2. demonstrate the ability to develop object-oriented software with the Python language and use industry standard development tools (a,c,d,i)
3. apply methods from functional programming and parallel programming to improve application quality and performance (a,b,c,i)
4. demonstrate and apply advanced Python language features and third party libraries for data analysis applications (a,b,c,i)

8. Course evaluation method

Quizzes ..... 10 % Homeworks ..... 50 % Midterm Exam ..... 15 % Final Exam ..... 20 % Participation ..... 5 %	The **quizzes** include multiple-choice type tests administered online using Canvas. The **homework** problems require programming in Python and the use of industry standard development tools and libraries.

9. Course grading scale (tentative)

Grading Scale:
A: 100-95, A-: 94-90, B+: 89-85, B: 84-80, B-:79-75, C+: 74-72, C: 71-68, C- 67-60, D: 59-50, F:49-0

10. Policy on makeup tests, late work, and incomplete grades

Late work is not acceptable, except for special (e.g. medical) circumstances and with advance notice.

Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.

No *extra credit assignments* will be given. However, some homeworks have extra credit problems.

11. Computing Resources and Software

Students are responsible for applying proper backup procedures to preserve their work on homework assignments and the project. Common methods involve copying files periodically and as necessary to USB flash drives, the FAU drives, Google Drive, DropBox, or some other online service.

Students should have access to a PC running Windows, Linux, or Mac OS with internet access. Students are **required** to download and install

- Python version 3.x from https://www.python.org/downloads/. It comes preinstalled on new Debian or Fedora-based distributions.

Install the IDLE integrated Development Environment:

- (it comes preinstalled with Python on Windows)
- on Debian based Linux install idle3 from the Software Center or run command “sudo apt install idle3” from the terminal
- on Fedora based Linux, run command “sudo dnf install python3-tools”
- on Mac OS X,
  - Read instructions for Python3 installation at https://docs.python.org/3/using/mac.html
  - you *may* have to install Active State tcl/Tk for IDLE, from http://www.activestate.com/activetcl/downloads

12. Participation

Classroom attendance for the students registered for live section is mandatory. Repeated absences will cut the participation points to 0.

All class material and assignments will be posted on Canvas. Students should log in at least two times per week to make sure they are up to date with announcements, postings, messages, and assignments.

13. 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 *Student Accessibility Services* office, located in Boca Raton (SU 133), in Davie, and in the Jupiter campuses, and should follow all SAS procedures. http://www.fau.edu/sas/

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
www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

Students are **NOT allowed to collaborate** on the homeworks, quizzes, and exams. All work submitted must be the original contribution of individual students.
Students are encouraged to participate on the discussion board forums. Being active on the forums counts toward the participation points on the grading scale.

15. Required texts/reading

The Practice of Computing using Python, 3rd Ed., by Punch and Enbody. ISBN-13: 9780134520513

Note: the second edition is acceptable; keep in mind that chapter numbering may not match with the 3rd edition.

16. Supplementary/recommended readings

1. Textbook webpage: https://www.pearsonhighered.com/product/Punch-Practice-of-Computing-Using-Python-The-3rd-Edition/9780134379760.html
2. The Python documentation page: https://docs.python.org/3/
3. The Python tutorial: https://docs.python.org/3/tutorial/index.html
4. NumPy and SciPy documentation page: http://docs.scipy.org/doc/
5. Graphical User Interfaces with Tk: https://docs.python.org/3/library/tk.html

17. Course topical outline [tentative]

Week #	Start Date	*Unit #*	*Topic*	*Assignments Due*
1	01/09/17	1	Ch 1. Beginnings, Ch 2. Control	
2	01/16/17	2	Ch 2. Control, Ch 3. Algorithms	Homework 1, Quiz 1
3	01/23/17	3	Ch 4. Working with Strings	
4	01/30/17	4	Ch 5. Functions, Ch 6. Files and Exceptions	Homework 2, Quiz 2
5	02/06/17	5	Ch 7. Lists and Tuples	
6	02/13/17	6	Ch 8. More on Functions, Ch 9. Dictionaries and Sets	Homework 3, Quiz 3
7	02/20/17	7	Ch 10. More Program Dev. Ch 11. Intro to Classes	
8	02/27/17	8	Ch 12. More on Classes	Homework 4, Quiz 4
(not counted)	**03/06/17**	-	**Spring Break – no classes**	
9	03/13/17	9	Ch 13. Program Development with Classes	**Midterm Exam (online)**
10	03/20/17	10	Ch 14. Files and Exceptions II, Ch 15. Recursion	
11	03/27/17	11	Ch 16. Fun stuff with Python	Homework 5, Quiz 5
12	04/03/17	12	Parallel Programming	
13	04/10/17	13	Scientific Programming – NumPy and SciPy	Homework 6, Quiz 6
14	04/17/17	14	Web Programming	
15	04/24/17	15	Web Programming	Homework 7, **Final Exam (online)**

18. Computer Requirements / Technical Skills

Computer Requirements

- Operating System
  - A computer that can run Linux, Mac OSX, or Windows 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.
- Software
  - Once logged in to Canvas, please visit the links located at the top of each Canvas page for LMS compatibility with your computer. Make sure your Internet browser is compatible and that you have all the recommended plug-ins installed.

Required Technical Skills [in addition to prerequisites]
Word editing and ability to export documents to PDF format.

19. Technical Problems

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. Contact the eSuccess Advisor for assistance:
   eLearning Success Advisor - 561-297-3590
2. If you can, make a Print Screen of the monitor when the problem occurs. Save the Print Screen as a .jpg file. If you are unfamiliar with creating a Print Screen file, visit http://en.kioskea.net/faq/141-print-screen-screen-capture-windows-mac-os-x-and-unix-linux.
3. If the problem seems to be with Canvas or another system managed by FAU IRM or TSG 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:
   1. Select “Canvas (Student)” for the Ticket Type.
   2. Input the Course ID.
   3. In the Summary/Additional Details section, include your operating system, Internet browser, and Internet service provider (ISP).
   4. Attach the Print Screen file, if available.
4. If the problem is with the tools/code used in class then send an email to your instructor to notify him of the problem. Include all pertinent information of the problem – attach/paste course code or include the screenshot if it makes sense.
5. If you do not hear back from the Help Desk within a timely manner (48 hours), it is your responsibility to follow up with the appropriate person until a resolution is obtained.
6. In case you contacted your instructor and you don't get a reply in two days, please send the message again, call or stop by the instructor's office during office hours.

20. Selected University and College Policies

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.

Withdrawals
Any student who decides to drop is responsible for completing the proper paper work required to withdraw from the course.

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 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
Student Accessibility Services Office	http://www.fau.edu/sas/
Office of International Programs and Study-abroad:	www.fau.edu/goabroad
Freshman Academic Advising Services:	http://www.fau.edu/freshmanadvising

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*.

The instructor reserves the right to adjust this syllabus as necessary.