

**INSY 5336-004: Python Programming
Spring 2023**

[Online learning resource for students: Division of Student Success](#)

Instructor: Mohammad Murad

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Office Hours: 4:00PM to 5:00PM on Tuesday and Thursday or online by appointment.

Section Information: INSY 5336 / Section 004

Time and Place of Class Meetings: Tuesday and Thursday 5:30 – 6:50 p.m. Room: COBA 255

GTA: Ohimai Efosa Imoukhuede.

Catalog Description: An introductory programming course that teaches students how to solve business problems using the scripting language, Python. Students will be exposed to object-oriented programming concepts, file handling, database access, and graphical user interfaces.

Student Learning Outcomes: Python is a simple yet powerful scripting language that has been growing in popularity. It has been used widely for web development, game programming, general application development, and, more recently, for data analytics. The aim of this course is to acquaint students with the key aspects of the Python language. Upon successful completion of the course, students will be able to:

- a. apply data structures and programming constructs in the Python language, such as lists, tuples, dictionaries, classes, selection (e.g., if..else), and iteration (e.g., while and for loops), to solve business problems.
- b. access different file formats (e.g., csv).
- c. perform basic text and network analysis; and
- d. use APIs to access external data.

Required Textbooks and Other Course Materials:

1. Starting out with Python by Tony Gaddis, 5th edition, Pearson, 2020. (Main Book)
2. Python for Everybody: Exploring Data in Python 3 by Dr. Charles Severance, 2009. The book may be downloaded from <https://www.py4e.com/book.php> (Optional)

Other Materials/Resources/Readings:

1. Instructor Notes
2. Python for Data Analysis by Wes McKinney
3. https://www.kevinsheppard.com/Main_Page
4. <https://developers.google.com/edu/python/>
5. Also check out www.coursera.org and www.udacity.com for introductory Python courses
6. [Bookstore Link](#)

Software: Install Python and Jupyter using the [Anaconda Distribution](#), which includes Python, the Jupyter Notebook, and other commonly used packages for scientific computing and data science. [Google Colab](#) will also be used. Please open a Gmail account if you don't have one. More details will be given in class.

Description of major assignments and examinations:

The distribution of points will be as follows:

| <u>Component</u> | <u>Points Possible</u> |
|------------------------------|-------------------------------|
| Homework Assignments | 200 |
| Project | 100 |
| Exams 1, 2, 3 | 300 |
| Final Exam | 400 |
| Total Possible Points | 1000 |

Grading: Points earned and accumulated will be used in the following grade calculation:

| <u>Points Earned</u> | <u>Letter Grade</u> |
|-----------------------------|----------------------------|
| 900 + | A |
| 800 to 899 | B |
| 700 to 799 | C |
| 600 to 699 | D |
| Below 600 | F |

Grades are earned based on performance, not given based on effort or need. Your grade represents your performance in this course, not your potential as a student or as a human. If you feel an error has been made in the calculation of your grade, you may contact the instructor via e-mail. Grades are otherwise non-negotiable.

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I will consider attendance mandatory for all lectures. If you miss a class, you are responsible for the materials covered.

Exams: You are responsible for everything that is covered in the classroom, including additional materials that the instructor may discuss in class. There are **no make-up exams**. Under extenuating circumstances (e.g., medical emergency, family emergency, work-related travel, etc.), the average score of other exams will replace the missed exam score. You can only use this excuse for one exam. The final exam will be comprehensive covering all the contents, whereas regular exams will cover partial contents (as described in Course Schedule).

Homework Assignments: You will have 3 or 4 homework exercises. You will have about a week to complete the exercises. Homework must be turned in electronically (via Canvas) by the due date and time specified by the instructor. **Late submissions will receive a score of 0 (no exceptions).**

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, and preparing for exams/quizzes.

Tentative Course Schedule

| Week | Date | Topics | Notes |
|------|------|---|--------------------------------|
| 1 | 1/17 | Syllabus, Introduction to Python, Getting started with Jupyter Notebook and Google Colab Chapter 2: Input, Processing & ... | |
| 2 | 1/23 | Chapter 3: Decision Structure Chapter 4: Repetition Structure | |
| 3 | 1/30 | Chapter 5: Functions (e.g. lambda, map, filter, reduce, zip) | |
| 4 | 2/6 | Chapter 6: Files and Exceptions Exam 1 Review | |
| 5 | 2/13 | Exam 1 Chapter 7: Lists and Tuples | Exam 1 on Feb 14 |
| 6 | 2/20 | Chapter 8: Strings and Regular expression Chapter 9: Dictionaries and Sets | HW 1 due on Feb 26 |
| 7 | 2/27 | Chapter 10: Object Oriented Programming | |
| 8 | 3/6 | Chapter 10: Object Oriented Programming | |
| | 3/13 | SPRING BREAK | |
| 9 | 3/20 | Exam 2 Introducing advanced python programming | Exam 2 on Mar 21 |
| 10 | 3/27 | Database programming. Networked Programs Last day to drop class 3/31 by 4.00pm | HW 2 due on April 2 |
| 11 | 4/3 | Python libraries I: NumPy, Pandas | |
| 12 | 4/10 | Python libraries II: Scikit-learn, Statsmodel | |
| 13 | 4/17 | Python libraries III: Matplotlib, Plotly Exam 3 | Exam 3 on April 20 |
| 14 | 4/24 | Python Hands-on: Project I: Machine Learning (ML) Project II: Natural Language Processing (NLP) Project III: Social Network (SN) | Project Due on April 30 |
| 15 | 5/1 | Final Review Last day of class (5/2) | |
| | | Final Exam (TBA) | |

NOTE: This is a tentative schedule and may be changed to serve the educational needs of the students enrolled in the course. Students are responsible to be aware of changes announced in class and/or via Canvas. – Mohammad Murad

Kindly check the Academic Calendar for important dates.

UNIVERSITY and COLLEGE POLICIES

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog. Policy details may be obtained from:

<http://catalog.uta.edu/academicregulations/grades/#graduatetext>.

<http://www.uta.edu/deanofstudents/student-complaints/index.php>.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** <http://www.uta.edu/disability/> or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Counseling and Psychological Services (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Title IX: The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Michelle Willbanks, Title IX Coordinator at (817) 272-4585 or titleix@uta.edu*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>. Faculty are encouraged to discuss plagiarism and share the following library tutorials <http://libguides.uta.edu/copyright/plagiarism> and <http://library.uta.edu/plagiarism/>

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is

aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>

University Tutorial & Supplemental Instruction (Ransom Hall 205): UTSI offers a variety of academic support services for undergraduate students, including: 60 minute one-on-one tutoring sessions, Start Strong Freshman tutoring program, and Supplemental Instruction. Office hours are Monday-Friday 8:00am-5:00pm. For more information visit www.uta.edu/utsi or call 817-272-2617.

The IDEAS Center (2nd Floor of Central Library) offers FREE tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center offers FREE tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at <https://uta.mywconline.com>. Classroom visits, workshops, and specialized services for

graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

You may also find the following information useful:

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| Library Home Page | http://www.uta.edu/library |
| Subject Guides..... | http://libguides.uta.edu |
| Subject Librarians | http://www.uta.edu/library/help/subject-librarians.php |
| Course Reserves | http://pulse.uta.edu/vwebv/enterCourseReserve.do |
| Library Tutorials | http://www.uta.edu/library/help/tutorials.php |
| Connecting from Off- Campus..... | http://libguides.uta.edu/offcampus |
| Ask A Librarian..... | http://ask.uta.edu |
| Campus Bookstore | http://www.bkstr.com/texasatarlingtonstore/home |

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| <p>Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911. Non-emergency number 817-272-3381</p> |
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