Introduction to Python for Applications to Biomedical Industries
Course Syllabus – BME 6303 - Fall 2021

Course Syllabus – Fall 2021

Note: Click on underlined text throughout the syllabus to access additional web linked sources.

Fall 2021 Attendance: This is a **fully online synchronous course**. This means learning will take place online only during virtual live sessions a set time (synchronous). These virtual live sessions are required as part of your final grade. Virtual live sessions will occur every Monday and Thursday from 2:30-3:45 pm. Attendance is required for these sessions. Missing required sessions will result in up to a 15% loss in the class participation portion of your grade. If you are unable to attend a session or sessions, contact me to discuss your options.

Public Health Considerations – Fall 2021

The health and safety of our campus community is a shared responsibility of all Roadrunners. It is important to note that none of us can guarantee a COVID-19 free environment. We all must, however, follow the guidelines outlined in the UTSA Public Health Task Force Report ("Report") and any other applicable policies as may be communicated by the University from time to time. This will include regulating behaviors outlined in the Report including:

- Encouraging the use of face coverings,
- Self-monitoring for symptoms using the Daily Health Check before coming to campus,
- Getting tested for COVID-19 if showing symptoms or after a close contact with a COVID-19 positive individual (if you are not already fully vaccinated and are not symptomatic),
- Following proper hygiene practices, including frequent hand sanitization, using cleansing wipes to disinfect surfaces, and minimizing the use of shared devices, tools and equipment,
- Avoid congregating (i.e. bottlenecking) near the entrances and exits before and after class – keeping your distance to reduce possible transmission from symptomatic or asymptomatic individuals.
- Communicating any COVID-19 related health concern to your supervisor or professor, and
- Submitting a self-report to report your positive test results or exposure (if not fully vaccinated and are also symptomatic for COVID-19 infection).

In turn, faculty members or supervisors will submit a COVID Case Referral to alert the COVID Response Team about positive COVID-19 cases for operational action. Failure to abide by these guidelines and requirements may result in disciplinary action in accordance with the Student Code of Conduct or applicable employment policies and procedures. Violations should be reported to the Office of Institutional Compliance via the UTSA Hotline for appropriate action.

For Face-to-Face Classroom and Other Academic Sessions

Face coverings/masks are recommended in indoor public and common spaces, especially for those individuals who are high risk and/or not vaccinated. For the latest information, please review the Roadrunner Roadmap.

Contact Information

Instructor Name: Amina Qutub, Pronouns: She/Her/Hers, Biomedical Engineering

Office Location: Virtual

Join Zoom Meeting

https://us02web.zoom.us/j/83284034337?pwd=UlhHUFJ5SGJnb1N1WTFnS3U4bVVUQT09

Meeting ID: 832 8403 4337

Passcode: 963800

One tap mobile

+13462487799,,83284034337#,,,,*963800# US (Houston)

Student Hours: Thurs 1:30-2:30 pm, via Zoom (same link as our class). This time I have listed as student hours is for you. It is a time I have dedicated to being available to you to provide assistance, asks questions or talk about the department, graduate school, career options, etc.

Phone Numbers: 510-541-3497

Email Address: amina.qutub@utsa.edu

Note: Refer to the Student Resources section of this syllabus for technical support, Student Disability Services accommodations, academic support and other resources. Contact the instructor ASAP if you are in need of additional resources to be successful in this course.

Social Media/Alternative Communication Platform: https://qutublab.org/python

Instructor Bio

I'm excited to be your instructor for the Introduction to Python for the Biomedical Industries, a new course that will help open doors in computational applications for biomedicine. I have been researching and teaching at UTSA since 2018, and before that researching and teaching at Rice University. I have focused my career on pioneering methods at the interface of computer science, neurovascular biology and engineering in order to understand how human cells communicate during processes of growth and repair, and use this fundamental knowledge to help eradicate hematological and neurological diseases.

At UTSA, I'm an Associate Professor in Biomedical Engineering and a research thrust lead of the Artificial Intelligence MATRIX Consortium. I'm also Director of the UTSA – UT Health Joint Graduate Group in Biomedical Engineering. I direct the Quantu Project, a nationwide study to optimize brain health over a lifespan using an integration of biosensing technology, modeling and functional neurogenesis bioassays. I also serve as the computational lead for the international Leukemia Protein Atlases, a clinical and engineering collaboration to identify new therapeutic targets for pediatric and adult leukemias. I received my PhD in Bioengineering from Berkeley and UCSF, with a major in mathematical modeling and minor in neurology, and my BS in Chemical Engineering from Rice University. I completed my postdoc as a National Institute of Health NRSA fellow in Biomedical Engineering at Johns Hopkins University, School of Medicine.

Teaching Philosophy

In computational fields, I believe students learn best by being shown examples as well as the theory or principle behind an approach, then trying out new problems on their own. The syntax of coding need not be memorized and can be readily looked up online. The crux of coding to solve biomedical engineering problems involves (1) understanding the underlying mathematical approach and (2) learning how to phrase this approach in succinct logical commands. Hence, I commit to focusing on teaching these key concepts and being available for students with questions about their work within the Student Hours. Additionally, the majority of the grading reflects the efforts students put in to solve real-world biomedical problems through a semester-long class project, while practice problems (Programming Challenges) are provided to help in preparation.

Communication Plan

The best way to communicate with the instructor during this course are the following, in order of priority:

1. Ask questions during the live courses
2. Ask questions during the virtual Student Hours
3. Ask questions and discuss solutions to Programming Challenges with classmates on the course **GroupMe**
4. Send an email to amina.qutub@utsa.edu using your UTSA email
5. Use the "Course Messages" tool in Blackboard to send a private message about grades. This communication stays in Blackboard and is the only secure way to discuss your grade. You will have to log in to Blackboard to send and receive these course messages.

Course Description

Students will be exposed to coding for applications using Python in the biomedical industries. The course aims to provide students with the ability to apply Python to analyze biological data and solve contemporary problems in the biosciences, bioengineering and biomedicine. Credit hours: 3

Prerequisites/co-requisites: Introductory engineering and basic programming, BME 4293 or equivalent

Course Objectives

Specific Objective I: To gain knowledge of the basic concepts of computer programming by learning the structure, syntax and implementation of the Python language.

Specific Objective II: To gain familiarity with the methods, open-source programs, and other tools available for programming using Python.

Specific Objective III: To gain the programming skills needed to apply Python code to interpret large, complex, multimodal data (images, videos, protein-DNA interaction data, etc.) and be knowledgeable of the ways to optimize code.

Course Format

This course will be taught entirely online. Live sessions will take place on Mondays and Thursdays from 2:30-3:45 pm. There will be no required class meetings on campus.

Course Navigation Instructions

When you log in to Blackboard you will arrive at the "**Announcements**" page. Use the course menu to go to other locations in the course. Blackboard course links will open in the current window or tab. Files and other external web links will open in a new window or tab. Click on the underlined text throughout this syllabus to access additional web linked sources.

Course Materials

Required Textbook

An introduction to course reading materials will provided the first week of classes. Links to required course readings will provided through Blackboard and found online (QutubLab.org/python).

Technology Requirements and Support

- Basic computer skills, including the ability to download and install computer programs
- Computer with a web camera and speakers/earbuds/headphones. You can use your own personal device (laptop or desktop). If you need to borrow a device, contact the Tech Café (see contact information below) to inquire about checking out a laptop for the semester.
- The ability to download and install ~500MB of programs on your computer. Required downloads for learning Python will be posted with instructions and shared the first week of class.
- For more information on accessing desktop computers on campus in the labs and the library, visit the UTSA Student Connect Computer Lab information page.
- **Reliable internet access.** For online live sessions and programming, please make sure to have access to reliable WIFI or wired internet. Campus including the JPL library has free WIFI service.
- Google Chrome is the recommended browser. Issues may happen if using Internet Explorer or Safari, especially with Blackboard Collaborate and Proctorio. *In case you are having trouble opening or accessing content, clear the cache and try a different browser*. You can run the Blackboard Browser Checker.
- Access to the Microsoft Office suite and Adobe Creative Cloud suite. These tools are provided free of charge to UTSA students and you can learn more about this software, including instructions on how to access these programs by visiting the Digital Tool Resources page.
- Review the Blackboard Self Help Portal.
- Review the Minimum Technical Requirements for Online Learning page

If you have a problem with Blackboard and you have already **cleared the cache** and tried with a **different browser**, please submit a ticket to University Technology Solutions (UTS) Tech Café. Be ready with your course ID and section. A screenshot of the issue will accelerate the troubleshooting process. Always notify the instructor about the issue you are encountering.

University Technology Solutions (UTS) Contact Information

- Email UTS Tech Café at techcafe@utsa.edu
- Call UTS Tech Café at 210.458.5555
- Visit the UTS Tech Café page

Grading Information

Final grades will be based on three activity and be graded out of a possible 100 total points. There may be opportunities for extra credit for assignments, in which case earned extra points will be applied to the graded activity specified.

Grading Schema

Activity	Percentage
Coding Challenges (3)	36%
Course Participation	14%
Final Coding Project	50%
Total Values	**100%**

Table 1. A breakdown of number percentages for each type of activity.

Grading Distribution

Final grades will be based on the following grading scale. This is a graduate level course. No courses in which grades of less than "C" (below 2.0 on a 4.0 scale) are earned may be applied to a graduate degree.

Points	Percentage	Grade
99 – 100	99-100%	A+
93 – 98	93 – 98%	A
90 – 92	90 – 92%	A-
87 – 89	87 – 89%	B+
83 – 86	83 – 86%	B
80 – 82	80 – 82%	B-
77 – 79	77 – 79%	C+
73 – 76	73 – 76%	C
Below 73	< 73	F

Table 2. A breakdown of letter grades by percentage earned.

Assignments & Assessments

CODING CHALLENGES

There are 3 coding challenges due **9/13, 10/11 and 11/15**

INTRODUCTION VIDEOS & DISCUSSION BOARDS

Being part of a learning community is a key element to participate in an online course. Start by introducing yourself with a few sentences, a picture or a video. Follow the netiquette to interact in the discussion boards.

CODING PROJECT

The semester coding project consists of a programming challenge to solve a biomedical problem. This semester-long group project will be introduced in the first and/or second week of classes. Groups will be assigned by the 3rd week of classes. The Coding Project includes a final presentation (presented via Zoom) and code that is submitted through Blackboard.

ZyBOOKs Practice

The zyBooks course materials and labs are interactive, automatically graded activities that will help you practice with the topics covered in class. These are not incorporated in your grade, nor required. They are an additional way to regularly learn and advance skills.

Course Expectations & Policies

All information you need for this course will be posted online, in Blackboard in the syllabus or schedule, or as an assignment, item, or announcement on the online course materials (QutubLab.org/python). Regular emails will update the class. It is your responsibility to check in and participate every week in the course and complete all listed activities and assignments.

Submission of Coursework

All assignments are due at 11:59 pm on the designated day unless otherwise noted. All assignments will be submitted online through the UTSA Blackboard course site on or before the specified due date and submitted to the location designated in the assignment description. Make sure you save your assignment somewhere that you can easily retrieve it later (e.g. on a travel drive, your personal computer, email, etc.). If something goes wrong with your submission, you will want to be able to retrieve your assignment for resubmission. Always notify the instructor about any issues you encounter.

Quality of Work

Strive to ensure all of your work is professional quality, neatly presented, grammatically correct, and free of spelling and punctuation errors. Coding challenges may require text, graphs and code. Ensure that code is submitted in a well-formatted manner, with comments.

Grading and Feedback

To view your grades on Blackboard, click on the "Grades" tab on the sidebar menu of our course in Blackboard. If additional feedback has been included with your grade, a speech-bubble icon will appear next to your grade. Clicking on this icon will open an additional window on your screen providing you with feedback.

zyBooks provides automatic grading and corrections. Grades on the coding challenges and the final projects should be posted within two weeks following the submitted date.

Video and Audio Recording

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. You are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless Student Disability Services has approved the recording of the instruction as part of your accommodation, you are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Student Disability Service accommodation. If the instructor or a UTSA office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. For more information on your privacy and class recordings, review [Student Privacy (FERPA) in Virtual Classrooms and Other Educational Recordings](#) and the [Guide to Secure Video Conferencing Tools](#).

Course Surveys and Evaluation

Course surveys provides details to the instructor on the experience and background of students relevant to the course material. Please fill out requested surveys. The instructor uses the feedback provided by their students in course evaluations to improve their teaching. Additionally, course evaluations are a strategy used by the university as one factor in evaluating an instructor's effectiveness. As a faculty member, the instructor encourages you to complete the course evaluation during the availability period later in the semester so that they can make improvements for the next group of students.

Late Work

Late work is allowed under some circumstances, with approval from the instructor.

Extra Credit

There may be opportunities for extra credit in the course, in which case this will be announced in advance and indicated on the assignment.

Incompletes

Course incompletes will be given only in extreme cases. If you feel you have extenuating circumstances that warrant an incomplete for the course, contact the instructor as soon as possible.

Interpersonal Interactions and Online Netiquette

We will discuss ideas and topics in class with which you may not agree. It is also possible you will present ideas and topics in class with which others will not agree. It is vital that all opinions are respected and that all interactions and class discussions take place in a respectful and safe environment, whether online or in person. To that end, be prepared to back up any opinion you may have with facts rather than emotions. At UTSA, we encourage everyone to openly share their ideas and opinions without penalty or judgment, but learning should always be based on facts and research. It is possible to disagree without being disagreeable.

Netiquette represents proper manners and behaviors online. Netiquette refers to the social expectations and behavior norms for online interactions and communications. In the online learning environment, you should follow common social standards. You are expected to be scholarly, polite, respectful, and professional. For additional information on those expectations, visit the Digital Learning Netiquette page.

Copyright and Fair Use

It is important to understand the issue of intellectual property rights. You may not use the images or thoughts of others for profit or gain without their written permission. The UTSA library has a Copyright Laws and Public Performance Rights (PPR) page.

UTSA Student Resources

Tech Support

- For technical assistance with Blackboard Learn, visit the Blackboard Self Help Portal. Blackboard provides support 24 hours a day, 7 days a week for UTSA faculty and students by phone, email, chat and live virtual consultations.
- Review the Minimum Technical Requirements for required technical specifications for learning online.
- Additional technical support can be accessed by visiting the UTS Tech Café page.
- Chrome is the recommended browser. Issues may happen if using Internet Explorer or Safari, especially with Blackboard Collaborate Ultra. In case you are having trouble opening or accessing content, clear the cache and try a different browser. You can run the Blackboard Browser Checker.
- To learn about all of the digital tools available to you as a UTSA student visit the Digital Tools Resources page.

Accommodations for Students with Disabilities

The University of Texas at San Antonio in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act provides "reasonable accommodations" to students with disabilities. Only those students who have officially registered with Student Disability Services and requested accommodations for this course will be eligible for disability accommodations. Instructors at UTSA must be provided an official confidential notification of accommodation through Student Disability Services. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found on the Student Disability Services webpage or by calling their office at (210) 458-4157. Accommodations are not retroactive.

Additional Assistance

If you have issues that we are unable to resolve together, you can contact your department chair (see List of Department Chairs,) an associate dean in your collage (see List of UTSA Colleges,) or UTSA's Equal Opportunity Services & Title IX Office.

Academic Support

Supplemental Instruction

Supplemental Instruction (SI) offers student-led study groups using collaborative learning for historically difficult classes. Supported courses and schedules can be found on the Tomás Rivera Center website. You can call the SI office if you have questions or for more information at (210) 458-7251.

Tutoring Services

Tomás Rivera Center (TRC) may assist in building study skills and tutoring in course content. The TRC has several locations at the Main Campus and is also located at the Downtown Campus. For more information, visit the Tutoring Services website or call (210) 458-4694 on the Main Campus and (210) 458-2838 on the Downtown Campus.

Academic Success Coaching

The Tomas Rivera Center (TRC) Academic Success Coaching Program offers one-on-one study skills assistance through Academic Coaching. Students meet by appointment with a professional to develop more effective study strategies and techniques that can be used across courses. Group workshops are also offered each semester to help students defeat common academic challenges Find out more information by visiting the Academic Success Coaching website or call (210) 458-4694.

The Writing Center

The Judith G. Gardner Center for Writing Excellence helps the entire UTSA Community with various writing projects, questions, and challenges. Our experienced tutors provide assistance to current undergraduates, graduate students, and faculty/staff members with each step of the writing process. Services are located at the Main Campus in the JPL building (2.01.12D) and at the Downtown Campus in the Frio Street Building (FS 4.432). They also offer online tutoring seven days a week by appointment so that you can chat live with a tutor. Visit The Writing Center's website to learn more and to schedule an appointment.

UTSA Libraries

UTSA has three libraries for students to use. The main library, the John Peace Library (JPL) and the Applied Engineering and Technology library are located on main campus. There is also a library located at the downtown campus as well. You can access UTSA Library services and resources using your abc123 and passphrase. You can also contact the research librarian assigned to your college/department for additional help.

Student Services

UTSA Mobile App

Make sure you download the UTSA mobile app to stay connected. Visit the UTSA Mobile App website to access the app download and learn about app features.

UTSA Social Media Channels

You can follow UTSA departments and organizations on social media. Visit our Social Media Directory page to find your favorite accounts to follow.

Support for Learning Online

If you haven't had an online course before, Learning Online Student Resources is a good website to help answer all of your questions.

Student Affairs Comprehensive Student Resource List

UTSA has an extensive amount of resources, tools, programs, and offices. The Student Affairs Student Resources webpage can help you access campus services and general information on most topics.

Counseling Services

Counseling Services provides confidential, professional services by staff psychologists, social workers, counselors, and psychiatrists to help meet the personal and developmental needs of currently enrolled students. Services include individual brief therapy for personal and educational concerns, couples/relationship counseling, and group therapy on topics such as college adaptation, relationship concerns, sexual orientation, depression, and anxiety. Counseling Services also screens for possible learning disabilities and has limited psychiatric services. Visit the Counseling and Mental Health Services website or call (210) 458-4140 (Main Campus) or (210) 458-2930 (Downtown Campus).

Student Health Services

UTSA's Student Health Services offers appointments and resources for students related to health education and services. You can find out more about the services offered by visiting the Student Health Services website.

Student Wellbeing Resources

UTSA is committed to the wellbeing of each member of the campus community and recognizes that numerous factors contribute to overall wellness: physical and mental health, diet and nutrition, physical activity, stress management and self-care, social behaviors and more. In addition to the services listed above, UTSA offers the following:

- Student Assistance Services (Student Ombudsperson)
- Behavioral Intervention Team (BIT)
- UTSA Police Department
- UTSA Campus Recreation Center
- UTSA Center for Civic Engagement
- UTSA Campus Climate Team
- Office of Inclusive Excellence
- Equal Opportunity Services & Title IX Office (Sexual Harassment and Sexual Misconduct)
- PEACE Center - Prevention, Education, Advocacy, Consultation and Empowerment

The instructor highly encourages you to click on and skim these links, so that you are aware of these services should you ever find you need them. If there are any issues, events, or resources you would like to discuss, please reach out to the instructor. They are happy to listen and help you find the right resources for your situation.

Additional UTSA Policies

Visit this website for a full listing of Student Policies A-Z Index. The link provides information on policies and procedures that apply to all students. It includes residence requirements, policies on grades and the grade point average, credit by examination, adding and dropping courses and withdrawal from UTSA, and scholastic probation and dismissal. The most important policies for you are highlighted below.

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) is the federal law that protects the privacy of students' education records. This law prohibits Financial Aid, Registrar, Fiscal Services, and many other UTSA departments from releasing any specific student education information without the student's written permission. Parents, guardians, spouses, etc., cannot have access to the student's education records, including

account information unless the student has granted authorization through a FERPA/Proxy account in ASAP. Learn more about your student privacy rights by viewing the [Family Educational Rights and Privacy Act](#) page by the Office of the Registrar.

Campus Carry

Pursuant to HOP 9.48, Carrying of Concealed Handguns on Campus, there are specific guidelines provided by the state of Texas in the presence of weapons on campus. The latest information can be accessed at the UTSA [Campus Carry](#) page.

Student Code of Conduct and Scholastic Dishonesty

The Student Code of Conduct is Section B of the Appendices in the Student Information Bulletin. Scholastic Dishonesty is listed in the [Student Code of Conduct](#) (Sec. B of the Appendices) under Sec. 203 for more information. For more information on the Student Code of Conduct, contact the [Student Conduct and Community Standards](#) team.

Transitory/Minor Medical Issues

In situations where a student experiences a transitory/minor medical condition (e.g. broken limb, acute illness, minor surgery; COVID or COVID quarantine) that impacts their ability to access classes or perform tasks within the class over a limited period of time, the student should reach out to the faculty member. In addition, please refer to [HOP 5.09 Class Attendance and Participation](#) for further information.

Sexual Harassment and Sexual Misconduct

UTSA is committed to providing an environment free from all forms of discrimination and sexual harassment, including sexual misconduct, sexual assault, domestic violence, dating violence, and stalking. If a student has experienced or experiences any of these incidents, know that UTSA has resources to help.

UTSA faculty have the responsibility to create a learning environment that is safe and free from hostility. State and federal law as well as [UTSA's Faculty Handbook of Operating Procedures (HOP 9.24)](#) require that instructors must report incidents of sexual harassment and sexual misconduct they learn about to the Title IX Coordinator or a Deputy Title IX Coordinator. This means that if a student tells their instructor about a situation (including classroom discussions, written work and/or one-on-one meetings) involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, the instructor must report it to the [Equal Opportunity Services & Title IX Office.](#) Although the faculty member must report the situation, the student will still have options about how the case will be handled, including whether or not the student wishes to pursue a formal complaint. The university's goal is to make sure students are aware of the range of options available to them and have access to the resources they need.

If a student wishes to speak to someone confidentially, they can contact any of the following on-campus resources, who are not required to report the incident to the EOS/Title IX Office: (1) [Counseling Services](#) at 210-458-4140; (2) Student Health Services at 210-458-4142; or (3) PEACE Center at 210-458-4077.

Campus Safety & Emergency Preparedness

UTSA is committed to providing a safe campus environment for students, faculty, staff, and visitors. As members of the community, we encourage you to take the following actions to be better prepared in case of an emergency:

- Alerts: Ensure you are signed up for UTSA Alerts through your ASAP.utsa.edu account.
- Emergency Procedures: Read through the information related to emergency preparedness on the UTSA Alerts page.
- Safety App: Download the LiveSafe App on your phone through the Apple store or Google Play; visit the LiveSafe App website for details.
- Important Numbers: UTSA Police - Emergency: (210) 458-4911; Non-Emergency: (210) 458-4242

Each one of us play a critical role in making sure ALL ROADRUNNERS are safe, know what to do, and how to stay informed during a campus crisis. Don't be scared, be prepared! #UTSAprepared

Inclusivity Statement

The University of Texas at San Antonio, a Hispanic Serving Institution situated in a global city that has been a crossroads of peoples and cultures for centuries, values diversity and inclusion in all aspects of university life. As an institution expressly founded to advance the education of Mexican Americans and other underserved communities, our university is committed to ending generations of discrimination and inequity. UTSA, a premier public research university, fosters academic excellence through a community of dialogue, discovery, and innovation that embraces the uniqueness of each voice.
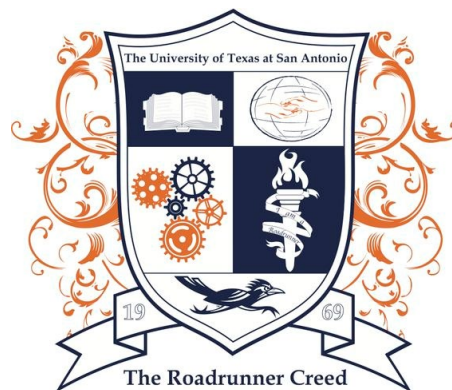
The Roadrunner Creed

Figure 1. Roadrunner Crest

The University of Texas at San Antonio is a community of scholars, where integrity, excellence, inclusiveness, respect, collaboration, and innovation are fostered.

As a Roadrunner, I will:

- Uphold the highest standards of academic and personal integrity by practicing and expecting fair and ethical conduct;
- Respect and accept individual differences, recognizing the inherent dignity of each person;
- Contribute to campus life and the larger community through my active engagement; and
- Support the fearless exploration of dreams and ideas in the advancement of ingenuity, creativity, and discovery.

Guided by these principles now and forever, I am a Roadrunner!

Changes

The syllabus is subject to change at the discretion of the instructor. Any changes/corrections to the course materials, assignment dates, or other updates will be communicated to the students ahead of time. It is your responsibility to check online (QutubLab.org/python) and Blackboard for corrections or updates to the syllabus.

Online Course Schedule

Synchronous sessions are Mondays and Thursdays, 2:30 pm Central. Students Hours are 1:30 pm Central on Thursdays. Link for all sessions:

Join Zoom Meeting

https://us02web.zoom.us/j/83284034337?pwd=UlhHUFJ5SGJnb1N1WTFnS3U4bVVUQT09

Meeting ID: 832 8403 4337

Passcode: 963800

One tap mobile

+13462487799,,83284034337#,,,,*963800# US (Houston)

WEEK 1: August 23 – Course Overview and Introduction to Python

Read

1. Course Syllabus and Schedule

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central

Code

1. Post a short bio / video to introduce yourself to the class.
2. Complete the Intro Survey.
3. Complete the software downloads / checks
4. Complete the "my first Python program"

WEEK 2: August 30 - Python Syntax (Data Types, Variables)

Read

1. Read Python.org introduction

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central

Code

1. w3School Syntax assignment

WEEK 3: September 6 – Python Operators

Read

1. Read Python.org introduction

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Introduce yourself to your classmates and teammates

Code

1. w3School Operators assignment
2. complete Coding Challenge I

WEEK 4: September 13 – Python Logic Expressions

Read

1. Read Python.org introduction

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Schedule class project team meetings for the semester
3. Meet with class project teammates

Code

1. w3Schools practice

WEEK 5: September 21 - Python Biomedical Application: Omics & Biosensor Data Processing

Read

1. Posted research article

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. Start work on class project with teammates

WEEK 6: September 28 – Python Functions

Read

1. w3School Functions assignment

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. zyBooks practice on Functions

WEEK 7: October 5 – Python Classes, Objects & Inheritance

Read

1. w3Schools assignment

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. zyBooks practice on Classes and Objects
2. Complete Coding Challenge II

WEEK 8: October 12 – Python Modules

Read

1. w3Schools assignment

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. w3Schools Modules assignment
2. Start on final project with teammates

WEEK 9: October 19 – Python Biomedical Application II: Biomedical Image and Video Analysis

Read

1. posted research article

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. w3Schools practice

2. progress on team project

WEEK 10: October 26 – Python File Handling

Read

1. w3Schools assignment

Participate

3. Attend the live sessions on Monday and Thursday at 2:30 pm Central
4. Meet with class project teammates

Code

3. w3Schools practice
4. progress on team project

WEEK 11: November 2 – Machine Learning and AI in Python

Read

1. posted research article and/or links

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. w3Schools practice
2. Progress on team project

WEEK 12: November 9 - Python: Intro to Databases

Read

1. posted research article and/or links

Participate

3. Attend the live sessions on Monday and Thursday at 2:30 pm Central
4. Meet with class project teammates

Code

1. Coding Challenge III

WEEK 13: November 16 – Special Topics: Web-scraping

Read

1. posted research article and/or links

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. w3Schools practice
2. Progress on team project

WEEK 14: November 30 – Python Biomedical Application III: Working with Public Biomedical Data

Read

1. Posted article and/or links
2. Articles relevant to your class project

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Meet with class project teammates

Code

1. w3Schools practice
2. Progress on team project

WEEK 15: December 3 – Final Coding Project Reports & Presentations

Read

1. Articles relevant to your projects

Participate

1. Attend the live sessions on Monday and Thursday at 2:30 pm Central
2. Present final project in class

Code

1. Complete and submit team project reports