ACCT 5391 Data Analytics for Accounting
Term Fall 2022

Instructor	Eva Liang
Email	hliang "at" uttyler.edu

Course Format

This course is delivered in an asynchronous online format.

Preferred means of communication

The best way to reach me is through email or my office hours. I will make every attempt to reply to your email timely. If you did not receive a respond after 2 days, please feel free to send me a reminder. Thank you!

Please send email through Canvas or using your Patriot email accounts. Emails to/from non-Patriot email accounts may not always be delivered due to the Patriot*Email setting.

You are also encouraged to utilize the Discussion tool in Canvas for course-related questions.

Course Description

This course introduces students to the principles, tools, and techniques of data analytics in accounting and business. Students learn how to develop and apply descriptive, predictive, and prescriptive analytics. Students also learn tools for business intelligence and data visualization, as well as their applications in accounting. The course includes several assignments and projects for students to gain hands-on experience in utilizing analytics.

Course Materials

Canvas
I'll use Canvas to disseminate course materials and information. In addition, class announcements will be sent via Canvas and you are responsible for reading these announcements (make sure your Canvas settings are enabled for receiving emails). I assume all of you are familiar, but don't hesitate to ask if you have questions.

Lecture Notes
Lecture notes including videos and slides will be posted on Canvas.

Required technology
Students should have their laptops / PCs to install and practice Python programming. Students also can use the computer in the COB 121, especially when installing Python on students' own computers is not feasible.

Recommended Textbooks and Readings
Python:
* Vic Anand, Khrystyna Bochkay, Roman Chychyla and Andrew Leone (2020), "*Using Python for Text Analysis in Accounting Research*", Foundations and Trends® in Accounting: Vol. 14: No. 3–4, pp 128-359. http://dx.doi.org/10.1561/1400000062
* Al Sweigart, *Automate the Boring Stuff with Python, 2nd Edition: Practical Programming for Total Beginners (2020)*

Other Useful Resources
* Google (the most useful resource)
* https://docs.python.org/3/
* https://www.stackoverflow.com
* https://www.learnpython.org
* https://learnpythonthehardway.org/book/appendixa.html
* http://www.pythontutor.com/visualize.html#mode=edit

Data visualization:
* *Better Data Visualizations: A Guide for Scholars, Researchers, and Wonks* by Jonathan Schwabish
* *Better Presentations: A Guide for Scholars, Researchers, and Wonks* by Jonathan Schwabish

Present convincing evidence:
- *The Craft of Research, Fourth Edition (Chicago Guides to Writing, Editing, and Publishing) 4th Edition,* by Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, Joseph Bizup, William T. FitzGerald
- *Writing Your Journal Article in Twelve Weeks: A Guide to Academic Publishing Success (second edition)*

University of Chicago Press, June 2019. ISBN-13: 978-0226499918

General Course Information

Learning Outcomes

As you work through this course, you will:

- Demonstrate knowledge of terms, methods, and tools for data management and analysis
- Demonstrate how to acquire, transform, analyze, and visualize data
- Demonstrate how to solve problems in accounting using data and analytics
- Demonstrate ability to write effective scripts to perform analytics

Prerequisites

Students in this class are expected to have the basic knowledge in

- Excel (e.g., saving and opening a Workbook, managing Worksheets)
- Accounting (e.g., auditing and financial accounting)
- Statistics (e.g., variables, distributions, regressions)

Please talk to the instructor if you are not familiar with the concepts mentioned above.

Commitment to an inclusive learning environment

Please feel free to let me know how to improve the course for you personally or for other students or student groups. Your suggestions and feedback are encouraged, valued, and appreciated.

Course Policies

Grades and Grading

Grades will be calculated based on this point break down.

Assignment	Points	Percentage
5 homework, drop the lowest one (10 points each)	40	20%
3 quizzes, drop the lowest one (30 points each)	60	30%
Comprehensive quiz (Quiz #4)	30	15%
Individual programming assignment	38	19%
Group project	30	15%
Syllabus Quiz	2	1%
Total	200	100%

	Pts From	Pts To	Grade
90% and above	180	200	A
80% to 89.99%	160	179	B
70% to 79.99%	140	159	C
60% to 69.99%	120	139	D
59.99% and below	0	119	F

Recommended study approach

To help you adequately prepare for class before we discuss the assigned material, I recommend the following study approach:

The best strategy for learning the course material is to practice with in-class practice problems. If you don't understand the material, please post a question in the question/answer discussion forum, send me an email, or visit my office before class.

This class involves with lots of practice. Please be ready to get your hands dirty. Programming could be difficult at the beginning. Be Patient. Having a positive mindset and having fun during the process are important for you to master the materials.

Homework (40 points)

As a way to motivate additional practice on your own time (remember? Practice makes perfect!) and to really cement each topic into your mind, you will complete short (20-60 minutes) homework assignments to be submitted via Canvas. There will be 5 of these during the semester and you may drop 1 lowest one and receive full credit.

I accept HW submitted through Canvas only. I will not accept HW submitted as email attachment or in any other form. Since it is allowed to drop the 1 lowest score from our 5 assignments, there will be no makeups for missed assignments. No late assignment will be accepted.

Individual Programming Project (38 points)

There is no better way to learn programming than hands-on practice. Thus, I design 3 individual programming projects for you to taste the joy (and pain) of process. You can work with your classmates for this assignment, but everyone needs to submit his or her own code.

I accept assignments submitted through Canvas only. I will not accept solutions submitted as email attachment or in any other form. Solutions for these problems that asking for writing a program must include full working code to get full credits. Appropriate comments in programming for readers are also required.

More details (due dates, deliverables, grading) will be elaborated in each assignment.

Quizzes (90 points)

Throughout the semester, we will have 3 in-class, written quizzes (Quiz #1-3). The assessments in this online course will be proctored using ProctorU These will be similar to in-class exercises and your homework problems—if you can handle the in-class practice and homework, the quizzes will be a cakewalk. You are free to drop 1 of these.

At the end of our class, we will have 1 comprehensive quiz (Quiz #4).

The quiz is timed. You must complete the quiz individually. Asking others' help on your quiz question prior to due date is a violation of academic integrity.

Dispute policy: If you wish to dispute the grade assigned to a quiz, you must do so IN WRITING within two weeks after the grades has been posted. You must include a specific rationale for why your answer is correct.

There will be no makeups for missed quizzes, unless you have legitimate absences (e.g., a religious holiday) allowed by university policies and arranged in advance.

ProctorU

The assessments in this online course will be proctored using ProctorU. Beyond the cost of initial equipment needed (e.g., a camera for your computer), there will not be any additional cost for proctoring. You will need to create a ProctorU account and install the ProctorU extension before attempting any assessment.

To create a ProctorU account, follow the ProctorU tool within Canvas. Please make sure you are using the current version of Chrome or Firefox and download the ProctorU extension available at http://bit.ly/proctoruchrome or https://www.proctoru.com/firefox.

In order to use ProctorU, you will need the following:
- High-speed Internet connection
- Webcam (internal or external)
- Windows, Mac, or Chrome Operating System
- Up-to-date Chrome or Firefox browser and ProctorU extension installed
- Valid photo ID
- Quiet environment to take your assessment

Group Project (30 points)

You will be assigned into a team to tackle some challenges together. More details (due dates, deliverables, grading) will be elaborated in each assignment.

<u>Within Group Evaluation:</u> At the end of semester, every student will evaluate the group members' performance. If more than half of the group members report that a student does not contribute to the group activities, the student will only receive 50% of the group activities points. If you have any concern about your group activities, please don't hesitate to talk to me about it.

Course Schedule

Week	Date	Topic to be covered
1	8/22 to 8/28	Analytics Mindsets & Getting started with Excel
2	8/29 to 9/4 9/2: Census Date	Data Visualization & Getting started with Python
3	9/5 to 9/11	Quiz 1
4	9/12 to 9/18	Python Programming - I
5	9/19 to 9/25	SQL
6	9/26 to 10/2	Quiz 2
7	10/3 to 10/9	Python Programming - II
8	10/10 to 10/16	Python Programming - III
9	10/17 to 10/23	Application 1: Automation
10	10/24 to 10/30	Quiz 3
11	10/31 to 11/6	Application 2: Statistics Inference
12	11/7 to 11/13	Project
13	11/14 to 11/20	Quiz 4
15	11/28 to 12/4	Application 3: Machine Learning

Note: Course schedule may be changed by the instructor to achieve learning objectives.

Student Resources, University Policies, and Additional Information

COVID

It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID and any new threats that may be developing. Be diligent about preventive measures such as washing hands, covering sneezes/coughs, social distancing and vaccinations, which have proven to be successful in slowing the spread of viruses. Encourage those who don't feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce exposure (CDC quarantine/isolation guidelines). Please work with your faculty members to maintain coursework and please consult existing campus resources for support.

Copyrights

The University of Texas System maintains its copyright policy at UTS107, "Use of Copyrighted Materials." If you are a member of a UT institution community (faculty, staff, or student), click the appropriate link to view frequently-used copyright agreements, courseware agreements, and software standard agreements. Unauthorized distribution of copyrighted material may subject students to civil or criminal penalties under the Federal Copyright law. Because copyright law is fluid, evolving, and fact-specific, contact an attorney for assistance on particular issues. UT institution community members may contact the Office of General Counsel for guidance.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with

individuals not enrolled in this course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Withdrawing from Class

Students you are allowed to withdraw (https://www.uttyler.edu/registrar/registration/withdrawals.php) from this course through the University's Withdrawal Portal. Texas law prohibits students who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at other 2-year or 4-year Texas public colleges and universities. Make sure to consider the impact withdrawing from this class has on your academic progress as well as the financial implications. We encourage you to consult your advisor(s) and financial aid for additional guidance. CAUTION #1: Withdrawing before census day does not mean you get a full refund. Please see the Tuition and Fee Refund Schedule . CAUTION #2: All international students must check with the Office of International Programs before withdrawing. All international students are required to enroll full-time for fall and spring terms.

Final Exam Policy

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members are required to maintain student final examination papers for a minimum of three months following the examination date.

Incomplete Grade Policy

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in lieu of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all course work or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor; and (c) the student presents these reasons prior to the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average for a student.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to complete all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has not been assigned within one year, then the Incomplete will be changed to an F, or to NC if the course was originally taken under the CR/NC grading basis.

Grade Appeal Policy

UT Tyler's Grade Appeal policy requires the completion of a Grade Appeal form for this action to take place. The grade appeal begins with the instructor of your course. If you do not agree with the decision of the instructor, you may then move your appeal to the department chair/school director for that course. If you are still dissatisfied with the decision of the chair/director, you may move the appeal to the Dean of the College offering that course who has the final decision. Grade appeals must be initiated within sixty (60) days from the date of receiving the final course grade. The Grade Appeal form is found on the Registrar's Form Library.

Disability/Accessibility Services

The University of Texas at Tyler has a continuing commitment to providing reasonable accommodations for students with documented disabilities. Students with disabilities who may need accommodation(s) in order to fully participate in this class are urged to contact the Student Accessibility and Resources Office (SAR) as soon as possible to explore what arrangements need to be made to ensure access. If you have a disability, you are encouraged to visit the SAR Portal (https://hood.accessiblelearning.com/UTTyler/ (Links to an external site.)) and complete the New Student Application. For more information, please visit the SAR wepage or call 903.566.7079.

Military Affiliated Students

UT Tyler honors the service and sacrifices of our military affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with me if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make me aware of

any complications as far in advance as possible. I am willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. Campus resources for military affiliated students are in the Military and Veterans Success Center. The MVSC can be reached at MVSC@uttyler.edu, or via phone at 903.565.5972.

Academic Honesty and Academic Misconduct

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the Student Conduct and Discipline policy in the Student Manual Of Operating Procedures (Section 8).

FERPA

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in University Policy 5.2.3.The course instructor will follow all requirements in protecting your confidential information.

Absence for Official University Events or Activities

This course follows the practices related to approved absences as noted by the Student Manual of Operating Procedures (Sec. 1 -501 (https://www.uttyler.edu/mopp/documents/1-general-policies.pdf)).

Absence for Religious Holidays

Students who anticipate being absent from class due to a religious holiday are requested to inform the instructor by the second class meeting of the semester.

Campus Carry

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php

UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu
- UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu
- The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903.566.7254)

Please refer to course canvas site and https://www.uttyler.edu/academic-affairs/files/syllabuspolicy.pdf for more information regarding Students Resources, University Policies, and Information.