



DEPARTMENT of COMPUTING

College of Business & Technology

EAST TENNESSEE STATE UNIVERSITY

Course Syllabus – Fall 2026

CSCI 4047 & 5047 – Data Analytics

The Stuff You're Looking For...

Contact Information

Instructor: Puskar Joshi
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Office: BlueSky 2.2176

Office Hours

Day(s)	Office Hours
Monday - Thursday	10:00 AM – 12:00 PM 03:30 PM – 05:00 PM

Class Meeting Schedule

Meeting Days: Monday & Wednesday
Meeting Time: 1:30pm – 3:30pm
Location: BlueSky 2.2H74 ("Classroom 3")
Start Date: August 24, 2026
End Date: December 10, 2026

Prerequisites

- CSCI B- or better in CSCI 1260 and C- or better in CSCI 1210 and C- or better in CSCI 2020

Weighted Averages for Assignments

Attendance: 10%
Assignments: 40%
Quizzes: 20%
Exams: 30%

Awarded Letter for Earned Grade

A (4.0): 93 or above
A- (3.75): 90-92
B+ (3.25): 87-89
B (3.0): 83-86
B- (2.75): 80-82
C+ (2.25): 77-79
C (2.0): 73-76
C- (1.75): 70-72
D+ (1.25): 67-69
D (1.0): 60-66
F (0): 60 or below

* Be sure to review "[Other Grading Policies](#)" below.

Things You Need

Software

Students need consistent and reliable access to a computer to run the software listed below as well as reliable internet access to complete this class. In addition, the computer should meet minimum specs according to the software vendor sites. (Linux, Mac, or Windows Required)

- D2L – <http://elearn.etsu.edu>. This course will use Desire2Learn for resource distribution, homework submission, grade reporting, and other class elements, and students should check the D2L site for the class regularly. The course instructor will provide feedback for most graded items through D2L.
- GitHub – <https://github.com>. Provider of Internet hosting site for software development and version control using Git.
- Python (>3.9) – Python is an open-source interpreted scripting language with myriad applications.
- Visual Studio Code – <https://code.visualstudio.com>

Reading Materials

In addition to the listed readings below, the instructor may provide additional materials at their discretion.

- Python Documentation: <https://docs.python.org/3/>
- Python Tutorial: <https://docs.python.org/3/tutorial/>

Course Information

Credit Hours: 3

Description: The purpose of this course is to introduce data acquisition, clearing, analysis, and visualization. It exposes students to readily available and robust state-of-the-art tools to discover trends and make informative business decisions in the fields of finance, information sciences, marketing, healthcare, risk management, etc. It also exposes students to the data analytics practices implemented in the business world. Topics include data exploring, acquisition and preprocessing, model selection, model evaluation, classification, clustering, and data presentation and visualization.

Learning Outcomes

Upon completion of this course, students should be able to:

1. Define basic concepts in data analytics and list the state-of-the-art technologies in this domain.
 2. Design applications to conduct data analytics using scientific methods.
 3. Critique and defend using different data mining techniques and their suitability to a given problem.
 4. Interpret and visualize the findings (knowledge) extracted from the data with detailed information.
 5. Demonstrate the capability of using data analytics skills to provide informative business decision making.
 6. Draw reasonable conclusions with sufficient explanation and elaboration.
 7. Argue and evaluate the existence of trends in any given dataset.
 8. Write insightful reports for a real-world case study, including illustrations and details. Other
- Grading and Assignment Policies

The Grade of “Incomplete”

A grade of “I” (incomplete) indicates that a student was passing the course at the end of the semester, but due to circumstances beyond the student’s control, was unable to complete the course requirement. It also indicates that the student has received consent from the instructor to complete the work for which an “I” is assigned.

The “I” grade cannot be used to allow a student to do additional work to raise a deficient grade or to repeat a course. An “I” grade must be removed no later than one calendar year from the time the grade is awarded. An “I” grade not removed under the guidelines noted above will be converted to an “F.” When an “I” grade converts to an “F” after one calendar year, the GPA is adjusted retroactively; consequently, a student may be subject to dismissal without a probationary term.

A student cannot withdraw from or drop a course after a grade of “I” has been assigned or after one year has elapsed. To remove an “I” grade, the student must complete the work independently and must not register for the course a second time or attend the same course at a later time in order to complete the course requirements. Incomplete grades are not removed until a new grade is recorded in the Office of the Registrar.

Late Submissions and Makeup Exams

In general, late submissions for any assignment will not be accepted for this course. Exceptions may be made for a legitimate excuse (such as an illness or athletic/academic event) that is documented in advance of the deadline. The instructor reserves the right to adjust this policy in the event of extreme circumstances.

Submission Guidelines

Unless otherwise stated, each assignment will be posted on D2L as either an Assessment or Dropbox item. The due date will be specified in D2L's system, as well as on the Course Schedule posted separately on D2L. Of the two, trust the Course Schedule document over D2L if there happens to be an inconsistency.

Working Together on Assignments

The instructor acknowledges the benefit of group problem solving and encourages students assisting one another. Students should feel comfortable discussing complex course topics to achieve a better understanding, explaining new topics, and how to correct errors. Students are encouraged to seek help from current students, former students, online resources, and other faculty members unless otherwise stated by the assignment. Examples of assignments where group assistance is not permitted includes, but is not limited to: tests, quizzes, and exit tickets.

Students who worked together on a project or assignment are still responsible for submitting individual work, unless otherwise stated by the assignment, and adhering to ETSU's policy on academic integrity. Students are not permitted to copy, paraphrase, or recycle anyone else's work.

Academic and Classroom Misconduct

Without exception, all submitted work for this class is to be done on an individual basis. Student teacher relationships are built on trust. For example, students must trust that teachers have made responsible decisions about the structure and content of the course, and teachers must trust that work submitted by a student was indeed done by the student. Acts that violate this trust undermine the educational process and are inconsistent with our very reason for being at ETSU.

You are encouraged to discuss the material and issues addressed in the course with members of the class and others. Helping one another understand the process for problem-solving is permitted if submitted work is done as an individual attempt. Everyone must do his/her work. Completing an assignment "by committee" and submitting it as individual work is academic misconduct unless the assignment has been designated as a team assignment. Your name on the submitted work is an affirmation that the work is yours.

HONOR CODE

East Tennessee State University is committed to developing the intellect and ethical behavior of its students. Students who violate policies on plagiarism, cheating, or fabrication will be held accountable for their actions. Students should report any knowledge of academic misconduct. Students are expected to act with honesty, integrity, and civility in all matters.

HONOR PLEDGE (PLEDGED AT UNIVERSITY ORIENTATION)

By becoming a member of the campus community, students agree to live by the standards of the honor code and thereby pledge the following: "I pledge to act with honesty, integrity, and civility in all matters."

PLAGIARISM

Plagiarism involves using someone else's words, ideas, and code without crediting the original author. Even if one does not copy the words exactly or even copies only a tiny part of someone else's work, one must cite the original author's name and provide a reference to that person's work (e.g., the title of work, year of publication, and name of publisher).

ARTIFICIAL INTELLIGENCE STATEMENT

You are welcome to use generative artificial intelligence (AI) tools (such as ChatGPT) in this class as doing so aligns with our course learning goals. However, you must properly cite any AI tools that you use in your work and be responsible for the accuracy and quality of the content generated by them. Please note that this policy is a general-use policy on Artificial Intelligence. Your instructor reserves the right to

change this policy based on individual circumstances and assignments. The use of Artificial Intelligence is strictly prohibited on examinations and falls under the university's academic misconduct policy.

REPEATING A COURSE AND COURSEWORK RESUBMISSION

When students must repeat a course, they may not resubmit work submitted in a prior class instance. In the case of research papers or other class items, students must select a different topic, and the work on the project must be wholly different from the work previously submitted. For other course assignments, the student must submit original work. Students may not submit work from other classes.

VIOLATION OF THE HONOR CODE

In cases where the honor code or other topics in the academic integrity section are violated, known as academic misconduct, the penalty will be an 'F' in the course. Be aware that repeated academic misconduct may result in the University applying other penalties.

Generative AI Use in This Class

Generative AI (Gen AI) can sometimes help and sometimes hinder learning. In Data Analytics and Visualization, your success depends on practicing analytical thinking: exploring data, choosing appropriate methods and visualizations, reasoning about what the data does and does not show, and producing original analysis and interpretation.

Therefore, our Gen AI policy for this class will be:

Allowed (with caution):

- Brainstorming ideas (example: analysis questions, hypotheses, candidate variables to explore)
- Clarifying concepts from lecture (example: "explain when to use a box plot vs. a histogram," "explain the difference between correlation and causation")
- Suggesting chart types to consider (you must decide and justify the final choice)
- Drafting outlines for analysis reports (you must rewrite in your own words)
- Debugging code help only when you can explain the fix (example: pandas, SQL, matplotlib, or R errors)

Not allowed:

- Submitting AI-generated quiz answers
- Copy-pasting AI outputs as project deliverables (analysis code, cleaned datasets, charts, dashboards, or written interpretations)
- Using AI to generate insights, conclusions, or interpretations as a replacement for your own analysis
- Using AI to fabricate, invent, or "fill in" data, results, or statistics
- Using AI to bypass team collaboration or individual responsibility

If you use AI for assistance, you must be able to explain your work clearly when asked, including why you chose a given method or visualization and what your results mean. Misuse may be treated as academic misconduct.

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In addition, my expectation is that everyone, including me, follows ETSU's policy and guidelines for Gen AI use.

Code snippets not written by yourself (e.g., textbooks, websites, Q&A message boards, Generative AI), MUST be cited.

The instructor agrees to notify the student of the determination of academic misconduct as soon as possible. If another act of academic misconduct occurs before notice of discovery of a previous act of academic misconduct, it will be treated as a separate incident.

Penalties for Academic Misconduct

Penalties will be imposed at instructor's discretion, typically based on an assignment's relative importance to the overall grade and a student's history of academic misconduct. The first offense of academic misconduct may result in a penalty on the test, quiz, or other assignment **up to a 100% reduction**. The second offense of academic misconduct may result **in a grade of "F" for the course**.

Prior to applying a grade sanction for academic misconduct, the instructor must consult with the department chair. The level of the consultation will be at the chair's discretion. Written notice is sent to the student's ETSU email account within seven business days of assigning the grade sanction. Students reserve the right to appeal the decision to impose a grade sanction.

Upon determination of academic misconduct, the instructor reserves the right to review previous submissions of other assignments. The grade for a previously graded assignment may be changed if it becomes evident that the student committed academic misconduct while completing the assignment.

All penalties of academic misconduct are tracked by the university. If the instructor determines that a student or group of students has engaged in academic misconduct, it will be reported to College of Business and Technology. Know and understand your right to appeal a grade.

Turnitin Plagiarism Detection

Turnitin is a web-based originality checking service. It searches more than 4.5 billion publicly accessible Internet sites, millions of documents from ProQuest databases, the Gutenberg collection of literary classics, and several million student papers submitted to Turnitin since 1996. ETSU faculty may use Turnitin to help students develop their writing and citation skills and to ensure academic integrity. Any instance of plagiarism detected by Turnitin will be reviewed by the instructor to determine if an instance of academic misconduct has occurred.

Grade Appeal Process

A student may appeal a course grade if the student has evidence that the grade was assigned in a malicious, capricious, erroneous, or arbitrary manner. Please review ETSU's grade appeal process here:

<https://catalog.etsu.edu/content.php?catoid=46&navoid=1906#grade-appeal-policy>

Expectations and Other Course Policies

Students should conduct themselves professionally by showing mutual respect between each other, the instructor, and other faculty. Professional behavior includes arriving on time, arriving prepared for class, paying attention when others are speaking, and fostering an inclusive and friendly environment for other students. **Students who are unable to conduct themselves professionally and with mutual respect for other students or the instructor will be asked to leave the classroom.**

This class meets in-person twice a week in a synchronous lecture format. Students are highly encouraged to ask for help during office hours.

The Office of Post-secondary Education, Department of Education in Code of Federal Regulation (CFR) 34 Section 600.2 states that students should expect a minimum of 2 hours of out-of-class work each week for each hour of in-class instruction. For example, a 4-credit hour course that meets twice a week for 2 hours has 4 hours of in class instruction, therefore the student should spend at least 8 per week doing assignments and/or studying for that course at home, for a total of 12 hours dedicated to that course each week.

Attendance and Participation

Regular on-time class attendance and participation is expected. Students arriving late create a distraction for others and miss important content. Respect for your classmates requires being in place and ready to begin at the scheduled time.

Absence structure

Absences	Grade Impact
0 – 3	No penalty
4 – 6	Final grade lowered by one letter grade (e.g., A to B, B- to C-)
7 or more	Final letter grade of F for the course

Definitions:

On Time: Present and ready to begin when class starts

Tardy: Arriving after class starts but within the first 15 minutes

Absent: Arriving more than 15 minutes after class starts, or not attending at all

Tardy Accumulation: Every three (3) tardies will count as one (1) absence toward your semester absence total. For example, if you are tardy 6 times and absent once, your total absence count is 3 (six tardies = 2 absences, plus 1 actual absence).

Disruptive Late Arrivals: The instructor reserves the right to deny entry to students who arrive late during activities where entry would cause significant disruption (e.g., during exams, presentations, guest speakers, or critical instruction). Students denied entry will be marked absent for that session.

Excessive Tardiness: Arriving more than 15 minutes late will be marked as absent, not tardy. If you know you will be late, it is better to communicate with the instructor in advance rather than disrupt class.

Quizzes and Assessments: Quizzes begin at the start of class and are available for 5 minutes only. Late arrivals receive a score of 0.

Student Responsibilities

When you miss class, it is your responsibility to obtain missed material from classmates and be prepared for upcoming sessions. Due dates are not adjusted for absences. Consult D2L for assignment requirements and announcements.

Extenuating Circumstances

If you face extenuating circumstances (serious illness, family emergency, university-sponsored events), contact me as soon as possible with appropriate documentation. Accommodations are made at instructor discretion and must be supported by proper documentation submitted before the absence when possible, or immediately upon return.

BlueSky Program Attendance Requirements

This course policy works in conjunction with the BlueSky Tennessee Institute Student Handbook attendance policy.

BlueSky students should be aware that:

- After your 3rd absence, BlueSky requires a meeting with the Student Success Manager to develop an action plan
- More than 5 absences may affect your BlueSky scholarship eligibility
- Absences include missing any scheduled BlueSky activities (class, professional development, mentor meetings, internships)

University attendance policy: <https://www.etsu.edu/policies/documents/attendance-policy.pdf>

Communicating with the Instructor

Email is the primary and recommended form of communication between instructor(s) and student(s). Please include course number and section in the subject line of the Email (e.g., CSCI 1250 003). The instructor will respond to emails within a reasonable amount of time; however, **students should not expect a reply outside of ETSU's working hours (8:00am – 4:30pm).** Please be aware of this as you work through assignments, and plan accordingly. The instructor will not respond to electronic communication other than correspondence via ETSU Email.

Students should send all Emails from their own student ETSU Email address.

In addition to email communication, students are highly encouraged to seek assistance during office hours. If the instructor's posted office hours are not amenable to the student's schedule, students are encouraged to schedule a meeting.

Entertainment Technologies in the Classroom

Do not bring entertainment technologies into the classroom. This includes, but is not limited to, portable DVD players, video game consoles and selfie sticks. Cell phones, tablets and laptops are permitted to be in the classroom, but should be put away during tests and quizzes, as well as other assignments if the device is not being used to complete that assignment. Additionally, cell phones should be silenced during class. Should an emergency call occur, please step outside of the classroom before answering the call. Under no circumstance should a cell phone, laptop computer, or other electronic device be used to watch entertainment videos during class, e.g., Netflix, YouTube, TikTok. **Students found in violation of this policy will be asked to leave the classroom.**

Disabilities and Accommodations

It is the policy of ETSU to accommodate students with disabilities, pursuant to federal law, state law and the University's commitment to equal educational opportunities. Any student with a disability who needs accommodations, for example note taking assistance, exam time adjustment or seating placement, should meet with Disability Services. Faculty accommodation forms are provided to eligible students and should be shared with the instructor as early in the semester as possible. Disability Services can be reached via telephone at (423) 439-8346 or web at <https://www.etsu.edu/students/ds/>.

Students may choose to not utilize the accommodations even though they are approved for them. If students choose to use their testing accommodations, they may make arrangements with the instructor or schedule their exams with Disability Services; preferably five days in advance.

The instructor cannot provide special accommodations for tests, quizzes, or other assignments to students without a notice from Disability Services. The instructor encourages students to contact Disability Services early in the semester even if they do not intend to use their accommodations. Disability Services can issue temporary accommodations, including parking, for temporary disabilities, e.g., waiting on a broken leg to heal.

Other University Information and Resources

- Syllabus Attachment: <https://www.etsu.edu/curriculum-innovation/syllabusattachment.php>
- ETSU Catalogs: <https://catalog.etsu.edu/>