

Syllabus

M5362-010–Data Warehousing Spring 2020 Tarleton State Univ Dr. Scott Cook

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| Sec (010): | Math Bldg 304, TR 4:30-5:45PM | My Office: | Math Bldg 132 (254)968-1958 |
| Instructor: | Dr. Scott Cook | Office Hours: | MTWR 2:00-3:30PM or by appointment |
| My Email: | sccook@tarleton.edu | Math Clinic: | Math Bldg 203 |
| Math Dept Office: | Math Bldg 142 (254)968-9168 | Math Clinic Hours: | MTWR 8:00-5:00, F 8:00-2:00 |

Course Content: Use SQL for manipulation and exploration of large data sets by creating tables, transforming data, using joins, and performing queries. If time allows, we will discuss recent developments like nosql, hadoop, kafka, interfacing with python, etc.

Materials:

- Required: PostgreSQL 12.1 www.postgresql.org
- Required: PostgreSQL tutorial & its datasets www.postgresqtutorial.com
- Required: PostgreSQL official documentation www.postgresql.org/docs/12/index.html
- Required: Google drive folder shared with me (submit assignments)
- Suggested: Many, many internet resources, blogs/newsletters, package documentation, tutorials (written & video), etc. The most important skill is to learn to teach yourself using internet-based resources.

Course Plan

Section numbers refer to www.postgresqtutorial.com

- Part 1: Using SQL on existing databases (Sections 1-12 & 18 & window functions)
- Part 2: Creating SQL databases (Sections 13-17)
- Part 3: Advanced topics such as nosql, hadoop, kafka, interfacing with python, etc

Homework/Quiz: Early in the semester, homework exercises will be assigned on most days and due one week later (submit via google drive). Be prepared for a short in-class quiz on the day a homework set is due covering the same topics. Example quiz questions: “Complete the following code”, “Describe what the following code does”, and “Which rows should not be in the result set of the code below”. Each time a homework set is due, a random process will determine whether we actually have a quiz. Quizzes count as another homework grade.

As the semester progresses, homework may become more involved and less frequent. Thus, later homework may carry more weight. We will revisit the potential of in-class quizzes at this point.

If sufficient time remains for Part 3, we will adopt a seminar style where you will present topics. These will be optional and count as extra credit/hwk score drops.

Project: You will do a capstone project using techniques from the course.

Exams: One midterm and one final exam; dates TBD.

Grading Policy: The guaranteed grade cutoffs are listed below. At my sole discretion, I may curve the course by relaxing them at the end of the semester.

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| Homework & Quizzes | 40% |
| Capstone Project | 20% |
| Midterm Exam | 15% |
| Final Exam | 25% |

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|---|-------------|
| A | [90%, 100%] |
| B | [80%, 90%) |
| C | [70%, 80%) |
| D | [60%, 70%) |
| F | [0%, 60%) |

Notes

- In the event that the university is closed for a scheduled class time, you should assume that whatever was scheduled/due on that day will be scheduled/due on the next class meeting.
 - You are expected to present a valid TSU ID upon request.
 - Aside from university and departmental policy, all aspects of course policy are at the discretion of the instructor and subject to change.
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University Master Syllabus

<http://catalog.tarleton.edu/syllabus>

Catalog Description: This course centers on the identification, exploration, and description of new patterns contained within data sets using appropriate software. Selected topics will be chosen from data exploration, classification, cluster analysis, and model evaluation and comparison.

Student Learning Objectives: Upon completing this course, a student should be able to do the following:

- a) Examine raw data in order to detect data quality issues and interesting subsets or features contained within the data.
- b) Transform raw data into a form appropriate for modeling.
- c) Select and train appropriate models using the transformed data.
- d) Measure the effectiveness of each model.
- e) Draw appropriate conclusions.

University Policy: Students are responsible for knowing and abiding by the policies and information contained in the Tarleton Student Handbook [TSUSH].

Student Responsibilities: The student is solely responsible for:

- Attending class.
- Completing every assignment by the specified due date.
- Utilizing, as needed, all available study-aid options (including meeting with the instructor, attending Supplemental Instruction (SI) sessions, going to the Math Clinic, using tutorial software, purchasing a student solutions manual, hiring a personal tutor, etc.) to resolve any questions that they might have regarding homework, course material, and/or technology projects.
- Reading all relevant material in the course text and lecture.
- Being present and prepared for each exam on the specified date and time, unless the instructor determines that a makeup exam is warranted (see Makeup Policy above).
- Obtaining assignments and other materials for classes from which they are absent.
- Giving as much effort as it takes to pass this course.

Student Success Statement - ADA: It is the policy of Tarleton State University to comply with the [Americans with Disabilities Act](#) and other applicable laws. If you are a student with a disability seeking accommodations for this course, please contact the Center for Access and Academic Testing, at 254.968.9400 or caat@tarleton.edu. The office is located in Math 201. More information can be found at www.tarleton.edu/caat or in the University Catalog.

Cell phones: Students are expected to set their cell phone so as to emit no audible noise in the classroom. Except for emergency situations, cell phone use (including texting) during the class period is prohibited. A student who is noticeably (to the instructor) distracted by his/her cell phone and/or distracting others with it may be asked to immediately disable it or to leave the classroom. To compensate for your electronic deprivation, keep your calculator on.

Absence Policy: Class absence policies will be established and enforced by each individual course instructor. The course instructor may recommend to the Dean of Students that a student be dropped from a course if excessive absences prevent satisfactory progress.

Makeup Policy: Each course instructor has the responsibility and authority to determine if work can be made-up because of absences. Students may request make-up considerations for valid and verifiable reasons such as the following:

- Illness

- Death in the immediate family
- Legal proceedings
- Participation in sponsored University activities (It is the responsibility of students who participate in University-sponsored activities to obtain a written explanation for their absence from the faculty/staff member who is responsible for the activity.)

Failing grades Tarleton differentiates between a failed grade in a class because a student never attended (F0 grade), stopped attending at some point in the semester (FX grade), or because the student did not pass the course (F) but attended the entire semester. These grades will be noted on the official transcript. Stopping or never attending class is considered an unofficial withdrawal and can result in the student having to return aid monies received. For more information see the Tarleton Financial Aid website.

Student Safety and Title IX: You are in college to achieve academic success, but you must feel safe and take care of yourself to reach your full potential. You have the right to pursue your education in a safe environment. Title IX makes it clear that violence and harassment based on sex and gender are civil rights offenses subject to accountability. *If you or someone you know has been harassed or assaulted, there is help and support on campus.* You may seek assistance confidentially through the Student Counseling Center or the Student Health Center. You may also make a report to the campus Title IX coordinator, which may trigger a university investigation (not a criminal investigation). Additionally, you may pursue criminal charges through the university police department. If the assault occurred away from campus, UPD can assist you in connecting with the appropriate law enforcement agency.

Student Counseling Center: 254-968-9044 (phone is answered 24 hours a day, 7 days a week), TSC 212

Student Health Services: 254-968-9271, TSC 212

Title IX Coordinator: 254-968-9754, Admin Annex 1, Room 112

University Police Department: 254-968-9002, located on the back side of Wisdom Gym

University Core Values

Academic Integrity Statement: Tarleton State University's core values are integrity, leadership, tradition, civility, excellence, and service. Central to these values is integrity, which is maintaining a high standard of personal and scholarly conduct. Academic integrity represents the choice to uphold ethical responsibility for one's learning within the academic community, regardless of audience or situation.

Academic Civility Statement: Students are expected to interact with professors and peers in a respectful manner that enhances the learning environment. Professors may require a student who deviates from this expectation to leave the face-to-face (or virtual) classroom learning environment for that particular class session (and potentially subsequent class sessions) for a specific amount of time. In addition, the professor might consider the university disciplinary process (for Academic Affairs/Student Life) for egregious or continued disruptive behavior.

Academic Excellence Statement: Tarleton holds high expectations for students to assume responsibility for their own individual learning. Students are also expected to achieve academic excellence by:

- honoring Tarleton's core values.
- upholding high standards of habit and behavior.
- maintaining excellence through class attendance and punctuality.
- preparing for active participation in all learning experiences.
- putting forth their best individual effort.
- continually improving as independent learners.
- engaging in extracurricular opportunities that encourage personal and academic growth.
- reflecting critically upon feedback and applying these lessons to meet future challenges.

Academic Honesty: Tarleton State University expects its students to maintain high standards of personal and scholarly conduct. Students guilty of academic dishonesty are subject to disciplinary action. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. The faculty member is responsible for initiating action for each case of academic dishonesty that occurs in his or her class.

Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, unauthorized use of technology and the abuse of resource materials.

- 1) Academic work means the preparation of an essay, thesis, problem, assignment or other projects submitted or completed for course credit and to meet other requirements for noncourse credit.
- 2) What constitutes an act of academic dishonesty may, in part, depend on the particular course and expectations of academic integrity in the context of the course objectives. This includes, but is not limited to, the following:
 - 2.1) Copying, without instructor authorization, from another student's test paper, laboratory report, other report, computer files, data listing and/or programs.
 - 2.2) Using, during a test, materials not authorized by the person giving the test.
 - 2.3) Collaborating with another person without instructor authorization during an examination or in preparing academic work.
 - 2.4) Knowingly and without instructor authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test or other required assignment.
 - 2.5) Substituting for another student or permitting another person to substitute for oneself in taking an examination, preparing academic work, or attending class.
 - 2.6) Bribing another person to obtain an unadministered test or information about an unadministered test.
 - 2.7) Using technological equipment such as calculators, computers or other electronic aids in taking of tests or preparing academic work in ways not authorized by the instructor or the university.
- 3) Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work in any academic setting.
- 4) Collusion means the unauthorized collaboration with another person in preparing written work in any academic setting.
- 5) Abuse of resource materials means the mutilation, destruction, concealment, theft or alteration of materials provided.

This syllabus subject to change as deemed appropriate by the instructor.