

ETI 461: Database Management and Administration

Credits: 3

Prerequisites: IST 210: Organization of Data

IST 242: Intermediate & Object-Oriented Application Development

Instructor: Dr. Sabahattin Gokhan Ozden

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Zoom for online meetings for office hours:

<https://psu.zoom.us/j/9810695687>

Course Section Information

Section	001
Course Start Date	Tuesday, Aug 26, 2025
Course End Date	Thursday, Dec 11, 2025
Course Time	TuTh 12:05PM-1:20PM
Classroom Location	Woodland 132A
To make an appointment	http://sites.psu.edu/starfishinfo
By Appointment Only Office Hours (Zoom & In-Person)	TuTh 1:45PM-4:15PM(Zoom&In-Person) Wed 1PM-3PM(Zoom)

Course Description:

ETI 461: Database Management and Administration (3) Introduces advanced topics in database management systems that are fundamental to effective administration of enterprise information systems.

Course Objectives:

The objective of the course is to enable a student to comprehend the principles of database management and administration. The students will learn how data are stored (indexing), accessed (query processing), shared (currency and transactions), and controlled (security). Students will be creating and using these features in a database in the laboratory. They can then develop, use, and tune database systems and applications, utilizing advanced database management features. This course assumes basic familiarity with relational models, Entity-Relationship diagram, SQL query language, and normalization (as covered in IST 210). It builds the foundation on more advanced concepts of database systems that are fundamental to a career in database administration.

Students will learn Oracle database (with Oracle Application Express) and use this database throughout this course.

This course is required by all Information Science and Technology (IST) undergraduates under both Associate and Baccalaureate degrees. It is a common course requirement and is a prerequisite for all degree options. IST 210 and IST 242 are the prerequisites for this course.

<https://learning.ist.psu.edu/courses/eti/461>

****Tentative Schedule:**

Academic Calendar: <https://abington.psu.edu/registrar/academic-calendar>

Week Lectures:

Week 1: Database Fundamentals (Review of IST 210)

Week 2: Data Dictionary

Week 3: Database Architecture: Files

Week 4: Database Architecture: Processes

Week 5: Database Architecture: Memory

Week 6: Administrative Users

 Starting and Stopping Oracle Instance

Week 7: Oracle Initialization Parameter Files

 Creating a New Database

Week 8: Class Review and Mid-Term Exam

Week 9: Creating and Managing Oracle Users

 Oracle Password Management

Week 10: Introduction to Oracle Database Auditing

Week 11: Managing Oracle Security

Week 12: Managing Oracle Tablespaces

Week 13: Managing Oracle Tables

Week 14: Indexes

Week 15: Student Presentations About a Database Related Topic

Final Exam

****The instructor reserves the right to change this schedule as needed. Students will be notified of major changes and Canvas syllabus will be updated accordingly.**

Learning Outcomes:

At the end of the course, students will be able to:

1. Understand the basics of data dictionary.
2. Understand the basics of database architecture.
3. Create a new database.
4. Create and manage Oracle users.
5. Understand the basics of database security.
6. Perform database tuning for better performance.

7. Understand table spaces and tables.
8. Understand indexes and their uses.

Textbooks:

No textbook is required for this class but additional materials like Solo Learn will support student learning. (<https://www.sololearn.com/Play/SQL>).

Additional Materials:

Internet Access, Canvas Access, Library Access

Oracle online video

learning: <https://www.youtube.com/channel/UCEpIXFjcQIztReQNLymvYrQ/playlists?sort=da&view=1&flow=list>

Solo Learn (available on web, iOS, and Android): <https://www.sololearn.com/Play/SQL>

Canvas Access: <https://psu.instructure.com>

Methods:

Information will be presented through a combination of lectures, tutorials, reading, and lab work. Working both individually and in groups, students will analyze database techniques, create and document database designs and present their work. Additional resources beyond the classroom materials such as software tools, support documents, etc. will be found by accessing any Internet search engine. Students will use Canvas to submit work and are expected to research information beyond the classroom.

Professionalism:

It is expected that everyone pursues the highest levels of professional excellence in the classroom and in their work. All documentation produced will include proper structure, formatting, and identification cover page, header, footer, enumerated headings, borders, table of contents page, table of figures, document title, revisions section, document version number, client name, Penn State Abington, IST course number, IST course section, course semester, author name, legends, diagram captions with numbers and descriptions, pagination using X of Y format, long date format on all pages, trademarks, conclusion, references cited page, proof read, spell checked, and grammar checked. All project materials completed by the group MUST be reviewed by each team member.

Commitment:

It is your personal dedication to expand intellectually. Complete all homework and group assignments with due diligence and complete them on time. Become interactive and involved with the lecture and group discussions.

Teamwork:

You will be required to work together on a team to pursue a solution to a problem. Begin by first defining the problem, then break the problem into small manageable tasks and assign each task to a member of the team. Interpersonal communication within the team must be managed and coordinated.

Leadership:

Everyone will participate in the activity of leading. This role requires personal organization, project management, group motivation, interpersonal communication, and learning how to inspire others.

Communication:

There are many methods available for group communication and communication with the instructor. Canvas has group discussion and chat areas where group members can collaborate on the project. If needed share your cell phone number, email address or Instant Messaging identity with your group team members. It is important that you configure your Penn State access account to forward your e-mail to whatever account you normally use. You should check your E-mail account regularly for class messages.

Grading Policy:

Team deliverables must be turned into the Canvas drop box area on-time and will expire\close on the assignment due date. If your semester bill is not paid following the Penn State timeframe your access to email and the course management system will be disconnected and the course grades will be withheld until account settlement with the Bursar office. During the semester your current course grade progress can be calculated using the Canvas Grading Scale Grade Value

Grade Evaluation: (See Canvas for Individual Assignment Due Dates)

Attendance/Participation in Class 10%

Quizzes 15% (5 take home quizzes)

Individual Assignments 35% (7 individual assignments)

Mid-Term Exam 20% (During class time, 75 minutes hour duration)

Final Exam 20% (Similar to Mid-term exam, during Final Exam week, not comprehensive)

Grading Scale:

Grading Scale

Grade Percentage	Grade
93-100%	A
90-92%	A-
87-89%	B+

83-86%	B
80-82%	B-
77-79%	C+
70-76%	C
60-69%	D
Below 60%	F

Attendance/Participation:

This course is designed to encourage students to become actively involved in the process of sharing knowledge. Someone who is not present is unable to gain a better understanding through interaction with others. In the event there is an emergency that prevents the student from attending class, it is necessary to inform the instructor within a reasonable time frame. Students missing the class are required to e-mail me.

Student attendance history can be viewed using Canvas. Attendance is mandatory unless it meets the university policy for excused absences.

PSU Class Attendance Policy: <http://undergrad.psu.edu/aappm/E-11-class-attendance.html>

Important Notes:

- Each assignment submission method is discussed in class and where needed noted in Canvas. Be sure to submit assignments using the proper method (ex: digital drop box, paper, shared documents, etc.) to ensure that no points are lost.
- All assignments/projects will be due on their corresponding due date/time as noted in Canvas. If an assignment cannot be completed on time, please communicate any difficulties to the instructor.
- Late assignments will be accepted within 5 calendar days of the original due date for a 20% reduction per day (20 percent penalty per day, this is automatically done by Canvas). After 5 days, the assignment will not be accepted. Late assignments due to university sponsored events or personal emergencies will be accepted for full credit within a reasonable timeline (i.e., within 3 days of returning to campus).

Exam Policy:

Missed tests without prior instructor notification approval will result in a zero-grade value. The student has one week to make arrangements with the instructor for scheduling the make-up. Make sure to review the Canvas calendar for all the test dates. Examinations will be administrated using the Canvas course management system. The examination format could be a combination of essay, multiple choice, and true and false questions.

Cancelled Class:

Cancelled class periods will only occur if the instructor experiences an unforeseeable situation which interferes with his attendance and the finding of a substitute. In this situation, students will be notified via university email, Canvas announcement, and/or a sign posted on the door of the classroom as soon as possible. The missed class time will be made up later using some mutually agreed upon supplement.

Late assignments:

Late assignments will be accepted within 5 calendar days of the original due date for a 20% reduction per day (20 percent penalty per day, this is automatically done by Canvas). After 5 days, the assignment will not be accepted. Late assignments due to university sponsored events or personal emergencies will be accepted for full credit within a reasonable timeline (i.e., within 3 days of returning to campus).

Classroom Etiquette:

Your cell phone ring volume should be turned off during class. No playing computer/Internet games during class, instant messaging, or surfing web sites not relevant to class topics and material! Disruptive behavior in class will not be tolerated and the student will be asked to leave the classroom for that meeting period. If a pattern of disruptive behavior exists, then disciplinary measures will be administrated.

Office of Student Conduct <http://studentaffairs.psu.edu/conduct/>

Course Preparations:

Class sessions will involve interactive discussions. It is necessary and expected that the necessary reading assignment preparation as detailed in the course calendar will be completed prior to the first class meeting of the week. It is also important that each student review any and all handout materials on a look-ahead basis prior to each class session.

Classroom Behavior:

Civility in dealing with our fellow students is expected. Intolerance, profanity, harassment of any kind, and disrespect are characteristics do not worthy of any of us and will not be tolerated. Individuals demonstrating uncivil behavior will be asked to leave.

Office of Student Conduct <http://studentaffairs.psu.edu/conduct/>

School Closing:

If the class meeting is canceled everyone will be notified via their email address. A message notification will also be sent out and it will be posted. For Snow closing call: 215-881-SNOW or 215-881-7669 closing #323 day #2323 evening classes.

Weather Emergencies <http://abington.psu.edu/weather-emergencies>

Academic Integrity:

According to Penn State policy G-9: Academic Integrity, an academic integrity violation is “an intentional, unintentional, or attempted violation of course or assessment policies to gain an

academic advantage or to advantage or disadvantage another student academically.” Unless your instructor tells you otherwise, you must complete all course work entirely on your own, using only sources that have been permitted by your instructor, and you may not assist other students with papers, quizzes, exams, or other assessments. If your instructor allows you to use ideas, images, or word phrases created by another person (e.g., from Course Hero or Chegg) or by generative technology, such as ChatGPT, you must identify their source. You may not submit false or fabricated information, use the same academic work for credit in multiple courses, or share instructional content. Students with questions about academic integrity should ask their instructor before submitting work.

Students facing allegations of academic misconduct may not drop/withdraw from the affected course unless they are cleared of wrongdoing (see G-9: Academic Integrity). Attempted drops will be prevented or reversed, and students will be expected to complete course work and meet course deadlines. Students who are found responsible for academic integrity violations face academic outcomes, which can be severe, and put themselves at jeopardy for other outcomes which may include ineligibility for Dean’s List, pass/fail elections, and grade forgiveness. Students may also face consequences from their home/major program and/or The Schreyer Honors College.

<https://aappm.psu.edu/policy/g-9-academic-integrity>.

Student Disability Resources:

Students with disabilities are welcome at Penn State, and every campus has an office for student disability resources (SDR). For further information, please visit the Student Disability Resources website at <http://equity.psu.edu/sdr>. To receive accommodations, you must contact the disability services office at Penn State Abington, complete the Introductory Questionnaire, provide documentation (available at <http://equity.psu.edu/sdr/guidelines>), and then participate in an intake interview. If your documentation supports your request, the campus disability services office will provide you with an accommodation letter. Please share this letter with your instructors as early as possible and discuss the accommodation with them. You will need to request a new accommodation letter for every semester. If you don't understand the process, contact the SDR Coordinator on campus for assistance.

At the Penn State Abington campus, you can contact Chavonne Campbell, MSW, Disability Coordinator, at Sutherland 102, by phone at 215-881-7962, or by email at ccc5786@psu.edu.
Helpful links:

1. Abington SDR website: <https://abington.psu.edu/disability>.
2. University Park SDR website: <https://equity.psu.edu/sdr>.
3. Introductory Questionnaire: <https://equity.psu.edu/sdrintro>. to start the process of requesting academic accommodations for a documented disability.
4. Documentation guidelines: <https://equity.psu.edu/sdrdocumentation>. (Explanation of what documentation you need to submit.)

5. Secure Upload Tool: <https://equity.psu.edu/sdrupload>. (Please do not send personal medical files through email, please upload them with this secure upload tool.)

Information on Available Counseling & Psychological Services (CAPS):

Many students face personal challenges or have psychological needs that may interfere with their academic progress, social development, and/or emotional well-being. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, peer counseling, crisis intervention, consultations, and mental health screenings. These services are provided by clinicians who welcome all students and embrace a philosophy respectful of diversity and inclusion. You can contact CAPS directly at abingtoncaps@psu.edu which is the main contact email, or feel free to visit the CAPS website abington.psu.edu/CAPS to learn more about their services and therapists.

Classroom Security Plan:

In the event of an emergency of any kind, such as a fire drill, the class will congregate outside of the building in the parking lot. If you anticipate needing special assistance in evacuating the building, please inform your instructor, who will attempt to accommodate your special needs. Campus Security: 215-881-7575, Campus Nurse: 215-881-7350.

PSUALERT is a service designed to alert the Penn State community via text messages to cell phones when situations arise on campus that affect the ability of the campus -- students, faculty and staff - - to function normally <https://psualert.psu.edu/psualert/>

Center for Student Achievement:

The Chaiken Center for Student Success, located at 315 Sutherland, offers Free Tutoring, Writing Consultations, and Success Coaching to all students. Scheduling appointments in advance is strongly

recommended and can be made through Starfish. Additional subject tutoring is offered through our online tutoring platform, Brainfuse, which can be accessed by visiting abington.psu.edu/achievement. The CCSS also offers workshops that strengthen students' abilities to study, write, manage time, make decisions, and achieve goals. To reach us, please email success-ab@psu.edu or stop by 315 Sutherland for assistance!

Office of Global Programs:

The Office of Global Programs provides academic support, visa advising, engagement and leadership opportunities to all international students, as well as education abroad opportunities. International Students looking for assistance and advisement about U.S. immigration related issues and regulations (i.e. Travel, on and off campus employment, course enrollment requirements), should either "Submit a Question through the e-form in iStart or email Dagmara Karnowski at duk31@psu.edu.

Olga Moskaleva, Regional Global Engagement Coordinator, represents Penn State Global in the Southeast Pennsylvania Region, serving all students, faculty, and staff promoting global learning and engagement, intercultural assessment, cultural competency development, leadership and

United Nations Sustainable Development Goals initiatives on behalf of PSU Global. For assistance or for more information, please email Olga at ozm50@psu.edu

Academic advising for most international students is done by Melanie Boston. Melanie can be reached at mlb272@psu.edu. Melanie is also the point of contact for faculty-led embedded trips.

Students interested in an education abroad trip should work with their academic adviser to discuss how to make a trip fit into their academic plan. Students interested in full semester programs can learn more by making an appointment with a Penn State Global adviser.

Reporting Educational Equity Concerns through the Report Bias site:

Penn State takes great pride in fostering a diverse and inclusive environment for students, faculty, and staff. Acts of intolerance, discrimination, or harassment due to age, ancestry, color, disability, gender, gender identity, national origin, race, religious belief, sexual orientation, or veteran status are not tolerated and can be reported through Educational Equity via the Report Bias webpage (<http://equity.psu.edu/reportbias/>)

Sexual Harassment Policy:

The university's code of conduct states that all students should act with personal integrity, respect other students' dignity, rights, and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Violations of this principle can result in a range of sanctions, from a warning to expulsion. Note that Title IX makes it clear that violence and harassment based on sex and gender is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc.

Sexual harassment of faculty, staff or students is prohibited and will not be tolerated. It is the policy of the University to maintain an academic and work environment free of sexual harassment. Sexual harassment violates the dignity of individuals and impedes the realization of the University's educational mission. The University is committed to preventing and eliminating sexual harassment of faculty, staff, and students through education and by encouraging faculty, staff, and students to report any concerns or complaints about sexual harassment. Prompt corrective measures will be taken to stop sexual harassment whenever and wherever it occurs. See Policy AD-85 - Discrimination, Harassment, Sexual Harassment and Related Inappropriate Conduct: <https://policy.psu.edu/policies/ad85>.

Please contact our sexual harassment liaison:

Michele Scott, RN, BSN, Campus Nurse, 103 Lares, 215-881-7350, mus959@psu.edu

You may also seek out the campus counseling and psychological services with Huijiao Xu, Licensed Professional Counselor, hkx5064@psu.edu, 215-881-7488; or stop by the Wellness Center in 102 Lares any time. You can call PSU's Sexual Assault & Relationship Violence Hotline (800-550-7575) or the Victim Services Center of Montgomery County's 24-hour crisis hotline (888-521-0983).

If this is a Title IX issue, please contact Penn State Abington's Title IX Resource Person for more Information:

Gina D'Amato-Kaufman, Director of Student Affairs, gxd22@psu.edu, and Mary Ellen Glick,
Campus Case
manager, mpg5645@psu.edu.