

IST210: Organization of Data (Spring 2016)

Instructor

Benjamin V. Hanrahan, PhD

313H IST Building

College of Information Sciences and Technology

The Pennsylvania State University

University Park, PA 16802

Course Details

Class time:

M W 4:15 PM - 5:30 PM

205 IST Building

Contact Details:

Benjamin V. Hanrahan, bvh10@ist.psu.edu, **Instructor**

Course Description

As the database management software becomes one of the critical components in modern IT applications and systems, a solid understanding of the fundamental knowledge on the design and management of "data" is required for virtually any IT professionals. In a business setting, such IT professionals should be able to talk to the clients to derive right requirements for database applications, ask the right questions about the nature of their entities and inbetween relationships in their business scenarios, analyze and develop an effective and robust design to address business constraints, and react to the existing database designs as new needs arise. Solid understanding of the underlying data models and design issues in data applications is also critical for SRA students to ensure secure access to and intelligent analysis of data in complex business settings. Modern IT professionals should be able to guide a company in the best use of the diverse databaserelated technologies and applications toward the "Big Data" era.

As such, IST 210 aims to prepare IST and SRA students for obtaining fundamental understanding on the database concepts and practical skills to analyze and implement a welldefined database design. In particular, IST 210 provides an introduction to physical database design, data modeling, relational model, logical database design, SQL query language, and instructors' choices on database applications and advanced concepts. Students will learn to use a realworld commercial or opensource database management system, too. Upon taking IST 210, students should be able to understand the implications and future directions of databases and database technologies.

Course Objectives

- Understand the importance of data, databases, and database management
- Understand data modeling

- Understand the relational model
- Understand logical database design
- Understand SQL (Structured Query Language)
- Design and implement a database

Course Material

Required Textbook: Kroenke & Auer, Database Concepts, Seventh Edition, Prentice Hall, 2014. Print Version: ISBN13: 9780133544626, ISBN10: 0133544621

Additional materials will be posted using class website or Canvas.

Grading Policy

Letter Grade	Percentage
A	93 and above
A-	90-92
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	70-76
D	60-69
F	59 and below

Breakdown

Project: 25%

Homework: 25%

Midterm: 25%

Final: 25%

Extra Credit

A student may earn extra credit added to the final grade. An example would be volunteering for a research study mentioned in class, etc.

NOTE ON POINT/GRADE DISPUTES:

Any grade or point disputes will be handled after the last day of classes. At that time if you wish to have an item regraded, you may request it. You will need to provide a valid reason for the request to be granted. Approved requests will result in the entire assignment/project/exam being regraded. This means it is possible to receive a higher, lower, or unchanged grade upon regrading.

Attendance Policy

Class attendance is strongly recommended.

Penn State Academic Calendar (http://registrar.psu.edu/academic_calendar/spring16.cfm)

Homework Policy

Homework is due every Sunday at 11:55 p.m. unless otherwise specified. Turn all homework in via Canvas.

Homework is graded between zero (0) and two (2) points.

Zero (0) points will be earned if a homework assignment is not turned in on time. One (1) point will be earned if homework is turned in on time and the student has made a reasonable attempt to address each part of the assignment. Two (2) points will be earned if the homework is turned in on time and at least half of the assignment is completed correctly. For weeks in which no assignment is given, every student will receive two (2) points. The maximum possible points you may earn is 30. Homework is worth 25% of your final grade.

Please ensure your homework looks professional and communicates your ideas clearly. A rule of thumb is to ask yourself whether you'd be comfortable turning in a document of a similar caliber to your boss at work, or to a client who is paying you by the hour for your consulting services.

I reserve the right to deduct points for inattention to grammar, spelling, or the assignment instructions.

In the event you cannot complete an assignment in time, you have one amnesty day to use at your discretion. This amnesty day lets you turn in the homework up to 24 hours past the deadline with no penalty. Once your amnesty day has been used, I will not accept any other late assignments (you will get a 0 for any subsequent late assignments)

Email Policy

All email communication for this course should use the Canvas Conversations/Mail. Email sent to the instructor or TA may not be read.

We will try to respond to all Canvas Conversations within 24 to 48 hours of receipt (i.e. don't send a message an hour before an assignment is due and expect an answer, I will probably be asleep).

Academic Integrity

As Penn State students, I know you are smart and capable people. However, did you ever stop to think that cheating in classes hurts more people than just the cheater? When other people cheat at Penn State, it dilutes the value of your degree. Let's all do our part to make sure that a Penn State degree holds the highest reputation today and in the future.

In particular, make sure you understand the Penn State Principles and University Code of Conduct:

— "Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, 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. Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others."

Any violation of academic integrity will be investigated, and where warranted, punitive action will be taken. For every incident when a penalty of any kind is assessed, a report must be filed. I encourage you to discuss assignments with others (this is actually a wellknown technique for effective learning), but your writeups need to be done by you alone. If you have questions or concerns about academic integrity issues or are having difficulties with the class for ANY reason, please talk to me or the TA, even if you're unsure or are embarrassed about your situation. Everyone (yours truly included) makes mistakes. We won't judge you. Instead, we'll try to help you figure out how to maximize your chances of success given your current situation. So bottom line: if you're struggling, come and talk to us. It's a much better option than cheating

Affirmative Action and Sexual Harassment

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, gender identity or veteran status. Discrimination or harassment against faculty, staff or students will not be tolerated at The Pennsylvania State University. You may direct inquiries to either the:

Office of Multicultural Affairs

332 Information Sciences and Technology Building
University Park, PA 16802
Tel 814-865-0077

Office of Affirmative

Action, 328 Boucke Building, University Park, PA 168025901

Tel 814-865-4700/V, 8148631150/TTY.

For reference to the full policy: <http://guru.psu.edu/policies/AD42.html>

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Americans with Disabilities Act

It is Penn State's policy to not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in your testing or learning situation, your instructor should be notified during the first week of classes so that your needs can be accommodated. You will be asked to present documentation from the Office of Disability Services (located in 116 Boucke Building, 8631807) that describes the nature of your disability and the recommended remedy. You may refer to the Nondiscrimination Policy in the Student Guide to University Policies and Rules.

IST welcomes persons with disabilities to all of its classes, programs, and events. If you need accommodations, or have questions about access to buildings where IST activities are held, please contact us in advance of your participation or visit. If you need assistance during a class, program, or event, please contact the member of our staff or faculty in charge. Access to IST courses should be arranged by contacting the:

Office of Human Resources

332 Information Sciences and Technology Building

(814) 865-8949.

An invitation to Students with Learning Disabilities

It is Penn State's policy to not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in your testing or learning situation, you should notify Dr. Hanrahan during the first week of classes so that your needs can be accommodated. You will be asked to present documentation from the Office of Disability Services (located in 116 Boucke Building, 863-1807) that describes the nature of your disability and the recommended remedy. You may refer to the Nondiscrimination Policy in the Student Guide to University Policies and Rules.

Campus Emergencies

In the event of a Universitywide emergency course requirements, classes, deadlines and grading schemes are subject to changes that may include alternative delivery methods, alternative methods of interaction with the instructor, class materials, and/or classmates, a revised attendance policy, and a revised semester calendar and/or grading scheme. In the case of a Universitywide emergency, please refer to the course ANGEL page at <http://cms.psu.edu> or contact the instructor via email. For more general

information, please call (814) 867-5309 or subscribe to PSUTXT (<http://live.psu.edu/psutxt>). PSUTEXT is a service designed to alert the Penn State community via text messages to cell phones when situations that affect the ability of the campus to function normally arise.

Disclaimer

Please note that the specifics of this course syllabus and schedule are subject to change, and you will be responsible for abiding by any such changes. Your instructor will notify you of any changes.