IST 210: Organization of Data  
Spring 2017 University Park  
Tu Th 1:35 PM – 2:50 PM  208 IST

Course Description – The main purpose of this course is to introduce the design and use of relational database systems. In this course, we cover design using the entity-relationship (E/R) model, an overview of the relational model, conversion from E/R models to relations, the creation of a relational database system using SQL (Structured Query Language), and the creation of a Web-based system using PHP and a Database Management System (DBMS).

If time allows, we may briefly learn some other database languages, both concrete and abstract, including relational algebra. We will also introduce the concept of multimedia databases. This course will not cover the design and implementation of database management systems (e.g. how to implement an ORACLE or SQL server).

Instructor Contact Information

Dr. James Z. Wang  
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Teaching Assistant:  
Rachel X. Zheng  
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Office hours: Friday 9-11 AM or by appointment

Prerequisites – We assume working knowledge of IST 110. Background in data structure, discrete mathematics, software systems, and/or programming languages is helpful but not required. The course does require considerable dedication and hard work. The amount of study expected is about an average of 9 hours per week throughout the semester. You need to plan to spend this amount of time in order to be successful in this course.


You can supplement the textbook by getting a programming tutorial book in PHP. There are also plenty of online tutorials.

Course Academic Integrity Policies – The basic presumption is that the work you do is your own. Occasionally, especially when working on problem sets (but never on exams!), it may be necessary to ask someone or access some resources for help. You are permitted to do so, provided you meet the following two conditions.

1. You acknowledge the help on the work you hand in.
2. You understand the work that you hand in, so that you could explain the reasoning behind the parts of the work done for you by another.

Any other assistance constitutes a violation and will be treated as such. Additionally, any misrepresentation on your situations (e.g., health condition) for the purpose of gaining unfair advantages over other students violates academic integrity policies and can result in a fail grade for the course.
Grading Information -- The students’ performance will be assessed using a mixture of the following:

<table>
<thead>
<tr>
<th>Grading Component</th>
<th>Weight</th>
<th>Description</th>
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<tbody>
<tr>
<td>Attendance</td>
<td>-</td>
<td>Attending the classes is of high importance in understanding the course materials. While class attendance will not be a part of the final grade, <strong>you are urged to attend every class</strong>. Some class meetings will be devoted to lectures or exams. Others are intended for labs (managed by the TA), project group meetings in the classroom, reviews, or any other remedial items decided by the instructor. You can be penalized for as much as 10% of your final grade if your class activities distract other students. Some basic rules: You should NOT use the in-classroom computer, if provided, during the lectures. The computers may be used if allowed by the instructor but should NOT be used for any purposes other than the lab and the course. You should NOT talk to other students during lectures.</td>
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<tr>
<td>Homework Assignments</td>
<td>10%</td>
<td>Some homework questions will be assigned between weekly to biweekly. A portion of the problems on each problem set will be graded and your grade on the problem set will be based on your solutions to only those problems. Which problems will be graded will be determined after the problem set is submitted. We will be using an online grading system for some homework assignments. We may choose to grade all homework problems using the system. Each student is to work individually on the problem sets. Discussing with other students are allowed, provided that you follow the Course Policy on Academic Integrity. All homework assignments should be turned in by the due time on the respective due date for each assignment. <strong>No late homeworks</strong> will be accepted. However, since we anticipate that there may be unforeseen circumstances or medical emergencies that make it difficult to turn in homework assignments on time, each student is granted two extensions, each of at most 48 hours. The amount of time for each extension cannot be further divided among assignments; it applies to one assignment only. We urge you not to use these extensions except when there is an emergency, or for the last two assignments. After these extensions are used, late assignments will not be accepted regardless of the use of free extensions. Save your homeworks as we return them, in case there is an error in the way we record grades.</td>
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<tr>
<td>Lab Assignments</td>
<td>10%</td>
<td>We will have a few labs to use database software. Each lab will have some hands-on assignments. They will be graded and counted in the course grade.</td>
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<tr>
<td>Quizzes</td>
<td>-</td>
<td>We may give you a few unannounced ungraded in-class quizzes to help you assess the progress of your study. You do not need to turn in the quiz and we will provide the solutions. These quizzes, though not counted in the final grade, are important because the problem styles in the exams will be similar to the problem styles in the quizzes.</td>
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<tr>
<td>Projects</td>
<td>40%</td>
<td>In this course, you are expected to write a database application. You need to form a group of up to two students and inform me (via email) your group composition. Normally, the same score will be assigned for students in the same group. You should work as many hours on the project as your group mate do. I do not want to hear your group mate complaining that you don’t contribute as much. Your project grade can be penalized individually if that’s the case. Note that the group is for projects ONLY, not for homework problems and exams. You need to understand all parts of your group project, not just the part you have done. The project is partitioned to biweekly assignment: selecting your application, designing the database, obtaining and loading your data into a real database management system, and finally writing a number of SQL queries, programs with PHP, and exercising other features of SQL. As a group, you are expected to work together and turn in each project assignment on time. Team work skill is one of the skills we expect you to learn during this project. (In another word, “I’m the person in my group doing all the work” is NOT a valid reason for turning in assignments late.) The final project will be graded by the course staff and the decision will be final. Each group will be given a database account and a Web directory for putting PHP and HTML files. You are required to use this as the development platform. The accounts are used for each group to work on and to upload your project during the semester. You should keep a copy of whatever you turn in.</td>
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<tr>
<td>Midterm Exam 1</td>
<td>20%</td>
<td>There will be two (2) in-class open-textbook midterm exams. The exam days will be announced later. You cannot make up the midterm exams. If you have a class conflict at the exam time, you need to talk to me at least one week in advance so I can make arrangements.</td>
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<tr>
<td>Midterm Exam 2</td>
<td>20%</td>
<td>If you come to an exam late and the exam has already begun, you still need to turn in the exam when time is up and other students turn in theirs.</td>
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The class performance will be curved before letter grades are assigned. This course is known to be **extremely challenging** for many students. To be successful in the course, it is recommended that you spend **at least six hours each week** outside of the class to study for the course.
Student Responsibilities

Basics:

Please take your obligations in this course seriously. The rule regarding late homeworks was already mentioned, and you are also expected to take the exams when they are given.

Please do not schedule any extended trips, including business trips, during the time classes are in session. If you must do so, it is your responsibility to get the work in on time. In extreme cases, you may arrange with your TA to email or fax your homework solutions.

We have an obligation to run a fair course for everyone in the class. So please do not request non-medical exceptions and postponements.

It is also important to be able to publish solutions to assignments and exams in a timely manner. We cannot do so if people are given extensions of the deadline.

Comments regarding questions:

You are always encouraged to make use of my office hours or the time before, during, and after a class to ask me general questions related to things you don’t understand. But in order to be fair to everyone in this class, please try not to ask me questions specific to your answers of problems during a quiz or an exam. You may ask me to clarify a question during an exam. But I won’t comment on your answers or approaches. In another word, don’t ask “can I do it this way?” during an exam. I will also avoid answering similar questions to a specific problem in an assignment before the due date. I cannot give out the solutions to the homeworks before they are turned in because they do count in the final grade. Rule of thumb: when asking a question during an exam or before an assignment deadline, consider first if it is fair to other students who are working on the problems by their own.

We need to be fair to all students after we have determined the exam problems. We do not hold office hours within one day before an exam.

University Academic Integrity Policy (According to the Penn State Principles and University Code of Conduct):

Academic integrity is a basic guiding principle for all academic activity at Penn State University, allowing the pursuit of scholarly activity in an open, honest, and responsible manner. In accordance with the University’s Code of Conduct, you must not engage in or tolerate academic dishonesty. This includes, but is not limited to cheating, plagiarism, fabrication of information or citations, facilitating acts of academic dishonesty by others, unauthorized possession of examinations, submitting work of another person, or work previously used without informing the instructor, or tampering with the academic work of other students. 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.

Plagiarism (Cheating): Talking over your ideas and getting comments on your writing from friends are NOT examples of plagiarism. Taking someone else’s words (published or not) and calling them your own is IS plagiarism. Plagiarism has dire consequences, including flunking the paper in question, flunking the course, and university disciplinary action, depending on the circumstances of the offense. The simplest way to avoid plagiarism is to document the sources of your information carefully.

Affirmative Action & Sexual Harassment Policy:
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 the Office of Multicultural Affairs, 352 Information Sciences and Technology Building, University Park, PA 16802; Tel 814-865-0077 or to the Office of Affirmative Action, 328 Boucke Building, University Park, PA 16802-5901; Tel 814-865-4700/V, 814-863-1150/TTY. For reference to the full policy (Policy AD42: Statement on Nondiscrimination and Harassment): http://guru.psu.edu/policies/AD42.html

Americans with Disabilities Act: The School of Information Sciences and Technology 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 IST Building: (814) 865-8949.

Students with Disabilities: It is Penn State’s policy to not discriminate against qualified students with documented disabilities in its educational programs. (You may refer to the Nondiscrimination Policy in the Student Guide to University Policies and Rules.) If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at http://equity.psu.edu/ods/.

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see documentation guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.

J. Z. Wang – Spring 2017 Syllabus