INFO 1590 Database Design for Biomedical Data

Department of BioHealth Informatics
Indiana University School of Informatics and Computing, Indianapolis
Summer 2015

Time: MTWRF – 5/18/15 – 5/22/15 - 9:00am–12:00 pm
Location: IT 257, Informatics & Communications Technology Complex
535 West Michigan Street, Indianapolis, IN 46202 [map]
Instructor: Huanmei Wu, Ph.D., Associate Professor
Office Hours: Mon, Wed 1:00-2:00pm, or by Appointment
Office: WK 312, Walker Plaza Building
719 Indiana Avenue, Indianapolis, IN 46202 [map]
Phone: (317) 278-1692 (Office)
Email: hw9@iupui.edu
Website: http://et.engr.iupui.edu/~hw9/

Prerequisites: None

COURSE DESCRIPTION

The goal of this class module is to acquaint graduate students with the foundations of database systems, including the design of Entity Relational model, presentation of the Entity Relational Diagram (ERD), implementation the databases in Oracle, retrieval of the database using SQL*Plus, and creation of tables, views, and indexes.

Required Text(s):

Title: Database Management Systems
Author(s): Raghu Ramakrishnan and Johannes Gehrke
Edition: Third Edition
Publisher: McGraw-Hill Science/Engineering/Math

Course Outcomes

Upon completion of the class, the students are expected to become proficient and skilled at

- modeling databases at conceptual and logical levels of design,
- developing database schemas that enforce data integrity,
- creation, altering, and manipulation of tables, indexes, and views using relational algebra and SQL,
- performing queries in SQL to retrieve data from database,
- implementing of relational database system

EXPECTATIONS, GUIDELINES, AND POLICIES

CLASS ATTENDANCE

- Class attendance is required for classroom-based courses.
• Attendance shall be taken in every class. If you do not sign the attendance sheet while in class, you shall be marked absent.
  o Signing the attendance sheet for another student is prohibited.
  o The instructor is required to submit to the Registrar a record of student attendance, and action shall be taken if the record conveys a trend of absenteeism.
  o Absences must be explained to the satisfaction of the instructor, who will decide whether omitted work may be made up.
• Missing class reduces your grade through the following grade reduction policy:
  o Regardless of the reason, a 1st absence results in a 5% reduction in your final grade
  o A 2nd absence results in a 10% reduction.
  o A 3rd absence results in a 20% reduction.
  o Further absences result in an F in the course.
  o Missing class may also reduce your grade by eliminating opportunities for class participation.

CLASS PREPARATION

• You are expected to read the chapters & tutorials, and view the online lectures prior to the class period for which they are assigned.
• Research shows that regular attendance, preparation and active class participation have a positive impact on your final grade for a course.
• Ask whatever questions you have pertaining to the course, while we are face to face. When not in class, use the forums to ask your questions and receive answers. In this way, the entire class can benefit from your question. There are no silly questions!!!!

LATE ASSIGNMENTS AND SUBMISSION OF ASSIGNMENTS

• All work (unless otherwise noted) should be submitted via an attachment in the Assignments area.
• Class Work will be due by 11:55 PM of the specified day.

MAKE-UP EXAMINATIONS

• Make-up Examinations will be handled on a case by case basis. Generally, make-up exams are given only under documented emergency situations. You should contact your instructor as soon as possible to schedule a make-up. Make up exams may be harder than scheduled exams.
• If you are going to miss an examination date, it is your responsibility to contact the instructor **BEFORE** the examination is given to schedule an alternate time to take the test.

<table>
<thead>
<tr>
<th>GRADE ALLOCATION</th>
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<tbody>
<tr>
<td>• Homework (3)</td>
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<tr>
<td>• Project</td>
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<td>• Quizzes (3)</td>
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<td>• Class participation</td>
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<table>
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<th>GRADING SCALE</th>
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<tbody>
<tr>
<td>A 95%</td>
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<td>A- 94.9%</td>
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<table>
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<tr>
<th>ACADEMIC INTEGRITY STATEMENT</th>
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<tr>
<td>Cheating is absolutely not tolerated at IUPUI!</td>
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</table>

The IUPUI Code of Ethics is based on the need for trust in an academic community. IUPUI's system is developed by and maintained for the welfare of its students, and all students should make sure that they read and understand the provisions outlined in the Student Handbook. The code, which is available in the Office of the Dean of Students and in all school office, spells out what constitutes unacceptable behavior and the procedures to be followed when there are alleged cases of misconduct. The dean of students also has some very brief pamphlets on key areas of the code. The link that follows is not the code but rather abbreviated and paraphrased statements on key elements of the code: academic and personal misconduct as well as a section on what students should do if they believe that other students, faculty, or staff have violated their rights. The code also explains the procedures employed and how students may appeal decisions. For more information, consult the Code of Student Rights, Responsibilities, and Conduct as well as brochures located in the Office of the Dean of Students.

**Indiana University Purdue University Indianapolis Code of Conduct**

Any form of cheating/plagiarism on an assignment, homework or quiz will result in both a **zero score for the assignment** and a **one-letter grade penalty in the course**. The case will be reported to the Chairman of the Department of Computer, Information & Leadership Technology and a letter describing the infraction will be placed in your student file. Further disciplinary action will be pursued according to university policy as described in Part III of the Code of Student Rights,
Responsibilities, and Conduct (Issued August 15, 1997). Cheating, or helping another student to cheat, are considered equal cases of academic dishonesty and will be dealt with as noted above.

**What constitutes cheating?**

Giving another student access to your computer account, or negligently permitting another student to access your computer account constitutes cheating on your part if that other student copies any files that become implicated in a cheating case. Protect your account as if your academic career depends on it!

Giving another student your code "just to look at" has resulted in serious problems for both students in the past—even with the best of intentions. **Do not give your code to other students.**

Note: When creating graphics or Web sites, treat Web content as you would treat content from a published article or book. Please see below for what is considered "Acceptable" and "Cheating".

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>Cheating</th>
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</thead>
<tbody>
<tr>
<td>Luding a brief quote from a web page with the source cited.</td>
<td>Plying entire pages or paragraphs and publishing it as your own.</td>
</tr>
<tr>
<td>Using graphics from a free clip art or graphic site.</td>
<td>Using someone else's graphics without permission.</td>
</tr>
<tr>
<td>Discussing an assignment with another student.</td>
<td>Plying another student's work.</td>
</tr>
<tr>
<td>Looking at code samples to help you figure out what to do.</td>
<td>Plying entire code segments and submitting it as your own.</td>
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</tbody>
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If you are confused as to the difference between helping each other (which is encouraged) and plagiarism (which will not be tolerated), please ask me.
### Daily SCHEDULE (subjected to change)

<table>
<thead>
<tr>
<th>Day (3 hrs/day)</th>
<th>Contents</th>
<th>Readings</th>
<th>Assignments</th>
</tr>
</thead>
</table>
| 1               | - course and introduction  
- overview of database systems  
- installation of Oracle | Ch1  
Ch 2 | Homework 1 |
| 2               | - the relational model 1  
- the relational model 2  
- database operation | Ch 2 | Homework 2 |
| 3               | - SQL  
- Assessment 1  
- creation of database | Ch 5 | Homework 3 |
| 4               | - DB buffer management  
- DB memory management  
- DB Indexing | Ch 8  
Ch 10 | Homework 4 |
| 5               | - DB Views  
- DB Security  
- Assessment 2 | Ch 23  
Ch 21 | Homework 5 |