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Spring 2-1-2022

### CSCI 340.01: Database Design

Yolanda M. Reimer

*University of Montana, Missoula*, [yolanda.reimer@umontana.edu](mailto:yolanda.reimer@umontana.edu)

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## Syllabus Spring 2022

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**Instructor:** Yolanda Reimer

**Office location:** SS416

**Office hours:**

- Tuesday 11a-12
- Wednesday 2-3p
- Thursday 11a-12 and 1:30-2:30p
- by appt

**Email:** [yolanda.reimer@umontana.edu](mailto:yolanda.reimer@umontana.edu)

**Texts:**

1. (Required) Elmasri & Navathe, 2015. *Fundamentals of Database Systems (7<sup>th</sup> edition)*. Addison-Wesley.
2. (Optional) A good book on PHP and MySQL, such as:  
PHP and MySQL Web Development (4th Edition) by Luke Welling and Laura Thomson (Oct 11, 2008). Addison-Wesley Professional.

You may also find the following Web resources useful:

- [www.mysql.com](http://www.mysql.com)
- <http://www.php.net/manual/en/ref.mysql.php>

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### Course Description

Databases are an essential and ubiquitous part of everyday life, and many of our day-to-day tasks involve the use of an underlying database in some form or another. As computer scientists, it is critical that we understand fundamental concepts of databases and database management systems (DBMS), including how they are designed, implemented, queried and maintained. In this class, we will learn about data modeling, relational models, normal forms, file organization, index structures, SQL, and PHP. Through the course of many weeks, students will work on a project that involves the design and implementation of a web-accessible database using PHP and MySQL.

### Student Learning Outcomes

Upon successful completion of this class, students should be proficient with the following:

- Database system terminology, concepts and architecture
- Database design, including requirements specification and ER modeling
- Relational data model concepts, schemas, and constraints
- Functional dependencies and the process of normalization
- Programming in SQL, PHP, and MySQL
- File organizations, including single and multi-level indexing structures

## Prerequisites

The prerequisite for this class is CSCI 232 (Data Structures) or consent of the instructor. Please note that if you take this class without the necessary prerequisite, you do so at your own risk. The instructor is not responsible for getting you up-to-speed on knowledge or skills covered in the prerequisite class(es).

**Course Evaluation:** Your grade for the course will be evaluated based on:

In-class exercises (including final project presentation)	30%
Exams (3 total, including the final)	35%
Semester project (4 parts)	35%
<b>Total</b>	<b>100%</b>

Please note that this course may be taken for a traditional letter grade only.

## Missed Work Policy

I am unable to offer alternate dates and times—or make-ups—for in-class problem solving exercises or exams. If you miss any of these requirements without prior approval from the instructor and/or required documentation, you will receive a score of 0. Because of the continuing threat of Covid this semester, I will drop one in-class exercise grade (the lowest) at the end of the semester. Note that this does not apply to missed exams.

## Important Dates

In-class problems will be assigned approximately every 1-2 weeks; the schedule will vary as the semester progresses. There will be a total of about 6-7 in-class problem sets, for which there are no make-ups, and a final project presentation. There will also be 3 exams throughout the semester, including the final. Tentative exam dates are posted on the class schedule (weeks 5 & 9, plus finals week).

## Late Work Policy

Projects assignments are subject to a 20% per day (24 hour period) penalty including weekends. This only applies to the semester long project, not to in-class exercises.

## Academic Dishonesty

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at

[http://www.umd.edu/vpsa/policies/student\\_conduct.php](http://www.umd.edu/vpsa/policies/student_conduct.php)

In other words...

I expect all work handed in for this class to represent **your** understanding of the material and **your** execution of assignments, not that of others. This means that you are not to **copy** answers from others, nor are you to **give** your answers or code to others. If you engage in any of these unacceptable practices, at a minimum you will receive an automatic zero on that assignment. It is also possible that transgressions will be recommended to the Department Chair and upwards through the Administration. Note that this does not mean that you cannot help others. However, when you do so, sketch problems and thoughts out on a whiteboard, for example, rather than sharing exact solutions. If you are ever in doubt as to what is acceptable or not, you must ask the instructor first.

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## Important policies related to Covid-19:

Due to the continuing threat of Covid-19 we need to be proactive in determining the best way to keep our class accessible and effective for all student learning. Therefore, for this semester, the following Covid reminders and class policies will be put in place.

- If you are sick, please stay home.
- When you are in class, please wear your mask properly (over both mouth AND nose) at all times. This is University policy.
- Bring a jacket because I will keep windows open during class for increased ventilation.
- On the first day of class, I will assign you a seat. You must keep this same seat for the entire semester to limit exposure to and from others.
- This is scheduled as a face-to-face class, which is the preferred modality for most of us. I will not be offering this class as hybrid (e.g., I will not Zoom while lecturing in the classroom). It is simply too distracting and difficult to do both well, and it limits my ability to use the whiteboard and hold in-class activities, which are frequent. Therefore, you should establish one or two study-buddies early in the semester who you can rely on to share notes with if you miss class.
- As stated above, I will drop **one** in-class exercise grade (the lowest) at the end of the semester. This should be sufficient cover for any single class period you might miss due to illness. Note that this does not apply to exams.

## Additional class policies and information:

- I expect you to come to class. While I do not officially take attendance, I do notice who is there consistently and who is not. As it turns out, attendance and grades seem to be correlated in that students who regularly come to class tend to do better than students who do not.
- If you miss a class, you and you alone are responsible for the material covered. This includes handouts, schedule changes, and lecture notes. I will not be able to share my personal notes for class periods you miss, so you should establish a classmate as a study-buddy for exchanging notes with early in the semester.
- For important dates and deadlines related to classes, visit:  
<http://catalog.umt.edu/academics/policies-procedures>
- Also in the University catalog, review the policy on **incompletes**. In particular, note that incompletes can only be assigned when the student has “been in attendance and doing passing work up to three weeks before the end of the semester.” Incompletes will not be issued simply to prevent a failing grade.
- Students with disabilities will receive reasonable modifications in this course. Your responsibilities are to request them from me with sufficient advance notice, and to be prepared to provide verification of disability and its impact from Disability Services for Students. Please speak with me after class or during my office hours to discuss the details. For more information, visit the Disability Services for Students website at <http://www.umt.edu/disability>.

Questions? Email [reimer@cs.umt.edu](mailto:reimer@cs.umt.edu)