**CS 4620/5620 Database Management Systems**

**If you are NOT registered, you CANNOT attend the class.**

**INSTRUCTOR INFORMATION**

Instructor: Ray Kresman

Office: 246 Hayes, 419 372 8783

Email: kresman@bgsu.edu

Office Hours: TR 1:30 – 3p

https://bgsu-edu.zoom.us/j/2362691171

Textbook: Database Management Systems. 3rd Edition by Raghu Ramakrishnan and Johannes Gehrke ISBN: 0-07-246563-8. McGraw Hill.

Class Resource: On Canvas. You may print Canvas resources yourself

Catalog Description:

CS 4620/5620: Semantic models for conceptual and logical design of databases. Detailed study of relational systems: design, dependency and normal forms. Use of interactive and embedded query language. Overview of topics such as database connectivity, security and object-oriented systems. Grade of C or better in CS 2020 is required for enrollment.

Communication Policy

* Class materials may be available on Canvas only for a limited time so it is important that you log onto Canvas and check items at frequent intervals.
* You can expect frequent communication from me, in-class, and thru Canvas. The course announcement button will have a history of these emails, so it is important that you log on to Canvas at least once daily to check various items.
* I will respond to your email on the same day or the next business day. Note that I do **not** check my email on Canvas. Instead, email [kresman@bgsu.edu](mailto:kresman@bgsu.edu) from your BGSU email a/c.
* Some activities may involve external or internal resources, and I will provide you access to some of these items that can be accessed remotely.

**HOW ARE YOU EVALUATED?**

* Assessment is through various types of activities, as noted below. See the table below for the total # points for each type of activity.

**Homework (about 5-7):** some may have a short turnaround time (1-3 days), others will have a turnaround time of 1 week. Mode of submission, number of points, and due date/time are noted when the task is assigned. Most activities do not involve programming.

Discussions: About 2-3 discussion items. Turnaround time is 1-4 days. Due date/time are noted when the task is assigned

**Exams**:

Two midterms (50 points each. R 9/30, 11/4). Comprehensive final (70 points). Date, time and duration of final exam is announced by the registrar, and noted in your mybgsu account. Will let you know ahead of time if there is any change in (the first two) exam dates

The midterms are 1 hour. The final exam is 2 hours long. All exams held in class.

* Recap of the above Assessment Activities

|  |  |
| --- | --- |
| Type of Assessment Activity | Total Points |
| Homework (about 7) | 160 |
| Discussions (about 3) | 30 |
| Exam  Exam 1 and 2 - 50 points each  Exam 3 - 70 points | 170 |
| Grand Total | 360 |

* Course grading scale is noted below. The instructor reserves the right to make changes at any time. ‘yourPercent’ below is (your total number of points / 360) \* 100:

90.0% ≤ yourPercent Grade is A

80.0% ≤ yourPercent < 90.0% Grade is B

70.0% ≤ yourPercent < 80.0% Grade is C

60.0% ≤ yourPercent < 70.0% Grade is D

* You will receive a score of zero for any work not submitted. I do not accept late submissions!
* Graduate students. Graduate students will have differentiated workload; when an activity is assigned, it will indicate additional workload, if any, for graduate students. Graduate students may also be asked to write a research paper and/or do a presentation – watch out when the work is assigned.

Learning Outcomes: I can …

* Databases: Describe the functions and advantages of a DBMS
* Databases: Classify the three popular data models by level of abstraction
* Normalization: Explain 1NF, 2NF, 3NF, BCNF, and 4NF
* Normalization: Explain anomalies in certain structures and apply the normalization process to reduce anomalies.
* SQL: Use SQL commands effectively
* SQL: Create views, subqueries and correlated queries
* Embedded SQL: Use SQL commands in C++
* Embedded SQL: Use JDBC and SQL commands in Java
* ER Model: Describe relationships between entities
* ER Model: Incorporate relationships into the design process
* ER Model: Design entity-relationship diagrams to represent simple database application scenarios

**Withdrawal Deadline**: 11/23/2021 Last day to drop and change grading option, undergraduates with college permission; graduates with coordinator and college approval. A withdrawal by this deadline will show as W in the transcript. University policy states that after this date, anybody withdrawing from the course will have the grade automatically turn into an F.

**Attendance**: Students are expected to attend each class and be on time. If you miss class, keeping up with missed class is your responsibility. If an activity is due in class and you happen to miss the class, make sure you turn it in **before** the class period (fully slide it under my office door).

**COVID-19**: Students are expected to follow BGSU COVID-19 protocols at all times, which includes wearing a face covering in all classroom, studio, lab, and office spaces for as long as a University mandate is in place. Failure to comply with these protocols may result in disciplinary action under the Code of Student Conduct. Please refer to the BGSU COVID-19 [website](https://www.bgsu.edu/covid19.html) for the most current information about expectations and requirements. Additionally, please review the [COVID-19 FAQ](https://www.bgsu.edu/covid19/faq.html) for the most up-to-date information on expectations. I would like to draw your attention in particular to Question Four in the Academics and Classes section

**Canvas**: The syllabus, schedule, and course policies will be available on Canvas. Your grades will also be available on Canvas throughout the semester.

**Office Hours and Help**: See the top of this doc. Please check your Canvas course site, Canvas messages, and your BGSUemail **regularly**. I post messages for class through ‘Canvas Announcements.’ Past messages are not deleted, but remain there. So, please pay attention to Canvas **announcements**.

**Information on Title IX:** Bowling Green State University (BGSU) is committed to providing a safe learning environment for all students that is free of all forms of discrimination and harassment. Sexual misconduct and relationship violence in any form are antithetical to the university’s mission and core values, violate university policies, and may also violate federal and state law. Faculty members are considered “Mandatory Reporters” and are required to report incidents of sexual misconduct and relationship violence to the Title IX Coordinator. If you or someone you know has been impacted by sexual harassment, sexual assault, dating or domestic violence, or stalking, please visit www.bgsu.edu/TitleIX to access information about university support and resources.

**Academic honesty**: All coursework for this class is expected to be YOUR OWN work. The MINIMUM penalty for copying someone's work (including current classmates, students from a previous offering of the course, or postings found on the web) or knowingly allowing someone to copy your work is a zero for the homework/project/exam/paper/presentation. The offense is also reported to the dean of your college. *Turnitin* and *Moss*, plagiarism detection tools, may be used in this course.

I will follow the Department’s policies and the University's code of academic conduct as defined in the *BGSU Student Handbook*. For specific details, refer to:

1. *Department of Computer Science Academic Honesty Policy* (<http://www.bgsu.edu/arts-and-sciences/computer-science/policies-for-current-students.html>)
2. *BGSU Code of Academic Conduct* (<http://www.bgsu.edu/content/dam/BGSU/student-handbook/documents/Academic-Code-of-Conduct-Chapter.pdf>)
3. *The Academic Charter*, section B-I.G (<http://www.bgsu.edu/content/dam/BGSU/faculty-senate/documents/academic-charter/B-I-G-Academic-Honesty-Policy.pdf>)

**Make-up policy:** Make-ups are considered typically for health emergencies **only**, and with documented doctor’s note, prior to the exam.

**Disability Policy**: In accordance with the University policy, students with disabilities must verify their eligibility through the Office of Disability Services for Students, 38 College Park Office Building, 419–372–8495 (<http://www.bgsu.edu/disability-services.html>). Contact me as soon as possible this semester to arrange any accommodations needed to assist with your success in this course.

**Religious Holidays:** It is the policy of the University to make every reasonable effort allowing students to observe their religious holidays without academic penalty. In such cases, it is the obligation of the student to provide the instructor with reasonable notice of the dates of religious holidays on which he or she will be absent. Absence from classes or examinations for religious reasons does not relieve the student of responsibility for completing required work missed. Following the necessary notification, the student should consult with the instructor to determine what appropriate alternative opportunity will be provided, allowing the student to fully complete his or her academic responsibilities (*The Academic Charter*, section B–I.F–4.b at: <http://www.bgsu.edu/content/dam/BGSU/faculty-senate/documents/academic-charter/B-I-F-Classroom-Related-Responsibilities.pdf>).Course Schedule (tentative, and subject to change):

W 1 Introduction Chapter 1

W 2 The Relational Model Chapter 3

W 2 – 3 Applications Chapter 6

W 3 - 4 Structured Query Language: SQL Chapter 5

W 5 – 6 Entity-Relationship Model Chapter 2

W 7 3 Tier Architecture/Relational Algebra Chapter 4

W 8 - 9 Relational Algebra Chapter 4

W 9 Relational Calculus Chapter 4.3

W 10-11 Relational Database Design: Normalization Chapter 19

W 12-13 Normalization/Internet Applications Chapter 7

W 14 Parts of Object Databases Chapter 23

W 15 ACID & Transaction Management Chapter 22

Final exam review