**Ramapo College of New Jersey**

**Anisfield School of Business**

**INFO332 Database Management Systems (4 credits)**

**Dr. Yuan Gao Office Hours: T/F 8:55-9:55am, 11:35-11:50am,**

**1:30-1:45pm**

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**College Closings: (201) 236-2902 School Office Phone: (201) 684-7378**

**Prerequisite:** INFO224 or equivalent.

**Required Textbook:** Pratt and Last, Concepts of Database Management, 8e. Cengage Learning ©2015. ISBN: 978-1-285-42710-2

**Electronic Forms of Communication:** In accordance with College policy, I will use your Ramapo College email address (@ramapo.edu) to communicate with you about all course-related matters. Use of both Moodle and a Ramapo College email address is required. **All Assignments and tests will be conducted through Moodle***.*

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# I. Course Description

A study of database design concepts with an emphasis on relational databases. Students will design and implement databases using SQL. Prerequisite: INFO224.

# II. Student Learning Goals and Objectives

**Measureable Student Learning Outcomes (SLO)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Academic Program Goal** | **Student Learning Outcomes** | **Assignments** | | | | |
| Papers | Presentation | Exams | HW & Lab Assignments | Class Discussion |
| **Goal**: Comprehensive Knowledge in the Discipline: **Integration**:  Our students will apply an information systems/information technology (IS/IT) systemic approach and operate cross-functionally. | **Outcome 1**: Students should be able to conduct an analysis of business cases using the integration of information systems/information technology (IS/IT) functional disciplines, i.e., systems analysis, programming, database, and networks. | X | X | X | X | X |

**Course-Specific Contributions to Learning Outcome (INFO332 Database Management Systems):**

* Students should be able to understand the concepts and theories in relational databases. Students will learn to understand and appreciate how businesses can use database management systems to organize business data and information,
* Students should be able to write database queries using structured query language (SQL). Students will analyze information requirements of business problems and develop SQL statements in retrieving information and modifying tables in a database, and
* Students should be able to develop a set of tables that conform to requirements of good database design. Students will learn the steps in converting un-normalized tables into a set of table that satisfy the principles of good relational database design.

# III. Grade Components & Performance Evaluation

Your course grade will be evaluated on the following components:

A. Examinations and Quizzes **Weight Moodle Points**

Exam 1 (Chapters 1, 2) (2 parts) 20% 100

Exam 2 (Chapter 3) (2 parts) 24% 120

Exam 3 (Chapters 5, 6) 20% 100

Online Quiz (Chapters 7, 8, 9) 10% 50

Final Exam (Chapters 1-6) 10% 50

B. Homework Assignments: 12% 60 (approximate)

C. Term Paper and Presentation: 4% 20

Total 100% 500 (approximate)

**Term Grade = (total points earned) / (total points possible)**, expressed as a percentage calculated in Moodle. Conversion to letter grade is carried out **strictly** according to the grading scale in the following table.

**Grading Scale**

**Percentage Grade Overall Performance**

93.0-100 A Outstanding

90.0-92.9 A- Excellent

87.0-**89.9** B+

83.0-86.9 B Good

80.0-82.9 B-

77.0-**79.9** C+

73.0-76.9 C Satisfactory

70.0-72.9 C-

66.0-**69.9** D+

60.0-65.9 D Poor

00.0-59.9 F Fail

**A. Class Attendance and Participation**

Attendance and participation are an important part of the learning process. Absences will have a negative effect on your overall performance in the course. Consistent attendance is strongly encouraged but not officially recorded with the following exception: Attendance on days of term paper presentations is required and is factored into the grade you earn on the term paper.

College policy states that students must notify faculty within the first three weeks of the semester if they anticipate missing any classes due to religious observance.

**B. Homework Assignments**

Each week, you will be required to complete one to two homework assignments. You are expected to complete these exercises and submit your work on time as indicated for each assignment. Please pay close attention to upcoming due dates of all your work.

**C. Examinations**

Three non-cumulative exams, one online quiz, and one comprehensive final will be administered through the semester. They will cover material in the lectures and in the textbook. A student missing an exam will receive a zero grade on that exam and no make-up exams will be given except for documented emergencies.

**D. Lectures**

Important material from the text and outside sources will be covered in class. Students should plan to take careful notes as not all material can be found in the texts. Discussions are encouraged.

**IV. Additional Policies**

**Policy on Academic Integrity -** Students are expected to read and understand Ramapo College’s Academic Integrity Policy, which can be found in the Ramapo College Catalog. Members of the Ramapo College community are expected to be honest and forthright in their academic endeavors. Students who are suspected of violating this policy will be referred to the Office of the Provost.

**Students with Disabilities** – Ramapo College is committed to providing reasonable accommodations for all students and to offer optional academic support for those with documented physical, sensory, learning, or psychological disabilities. Students can request academic accommodations by registering with the Office of Specialized Services (OSS). Information and documentation provided to OSS are held in confidence as educational records. Students can utilize these services at any time after registering with OSS. Students who need course adaptation or accommodations due to disability reasons should make an appointment to see an OSS representative during the first week of the semester. Please note: Students must be registered with OSS to receive accommodations. For additional information, The Office of Specialized Services (OSS) is located in the C Wing in room C205. The OSS phone number is 201-684-7514 (x7514) or you can email them at [oss@ramapo.edu](mailto:oss@ramapo.edu).

# V. Schedule of Class Sessions

## Week Topic Chapter

1 Introduction to DBMS 1

Working with QBE: TAL Distributors

2 The Relational Model 1: QBE 2

Database Background

Advantages and Disadvantages of Database Approach

Compound Criteria, Computed Fields, Functions, Grouping

3 ***2/5 Tue – Exam One Part One (Chapters 1 & 2 concepts, open-book, online)***

Sorting, Joining Tables, Actions Queries

Working with QBE: Colonial Adventure Tours Case

4 ***2/12 Tue - Exam One Part Two (Chapter 2, QBE, in-class, open-book)***

The Relational Model 2: SQL 3

Working with SQL: TAL Distributors

Simple Retrieval, Compound Conditions

5 Computed Fields

Using Special Operators (LIKE and IN)

6 Built-in Functions, Grouping

Nested Queries, Joining Tables, Action Queries

7 Working with SQL: Colonial Adventure Tours Case

Working with SQL: Solmaris Condominium Group

8 ***3-12 Tue - Exam Two Part One (Chapter 3 in-class)***

***3-15 Fri - Exam Two Part Two (Chapter 3 online)***

--- Spring Break ---

9 Database Design 1: Normalization 5

Functional Dependence, Primary Key, Candidate Key, Alternate Key

First Normal Form (1NF), Second Normal Form (2NF)

Third Normal Form (3NF)

10 Comprehensive Problems and Exercises (1NF, 2NF, 3NF)

Incorrect Decomposition

Multivalued Dependencies and Fourth Normal Form (4NF)

Application to Database Design

11 The Relational Model 3: Advanced Topics 4

Database Design 2: Design Method 6

User View, Information Level Design, Physical Level Design

12 One-to-One Relationship and Many-to-Many Relationship Considerations

The Entity-Relationship Model

13 Term Paper Presentations (4/23, 26)

Normalization and Database Design Discussions

14 ***4/30 Tue Exam 3 (Chapters 5, 6 in-class)***

***5/3 Fri Online Quiz (Chapter 7, 8,9)***

***Finals Week Final Exam (Chapters 1, 2, 3, 4, 5, 6 online)***

**INFO332 Database Management Systems**

Term Paper (5%)

A. Research a current and/or advanced topic in database management technology and practices. You should try to form a group of two (2) to four (4) students.

B. Requirements

* Paper length: **1000 words minimum** plus a bibliography page. You may use any bibliography style, as long as consistently.
* Use double spacing and Arial 10 point size or Times New Roman 12 point size.
* Include a header (i.e., your name, the course ID and section number) and a page number in the footer.
* Include appropriate graphics (pictures, screen shots, etc.) no larger than 2” x 3” apiece.
* Your grade will be based on both content and clarity and effectiveness in writing, including elements of grammar, spelling, punctuation, sentence structure, andreport format.
* ***In addition to the written paper outlined above, prepare an 8-minute presentation, using software of your own choosing, summarizing your research.***
* ***You will present your findings to the class on the scheduled presentation dates as indicated in the week-by-week schedule.***
* Include a completed “Assignment Cover Sheet” shown below. In case of a group paper, include all names on the cover page, and submit separately by each member via Moodle.

(Term Paper Title)

INFO 332 Database Management Systems

(Authors)