

Syllabus for “Course ISE 322: Database Systems”
Kinneret College on the Sea of Galilee
School of Engineering

Instructor: Michael J. May

Semester 1 of 5770

1 Course Details

The course meets **12pm-2pm** on Tuesdays. The Targil for the course is **10am-12pm** on Wednesdays.

The course has **2** hours of lecture and **2** hours of Targil.

The room for the course is **Room 13** in the Halperin Building. The room for the Targil is **Room 202** in the Sciences Building.

2 Overview

The following is the syllabus for “Database Systems” at Kinneret college in Semester 1 of 5770.

The course covers the fundamentals of database systems, Entity-Relationship Models, Relational Algebra, SQL, constraints and stored procedures. The course concludes with advanced topics, including an introduction to transactions and transaction management.

Students will be introduced to writing SQL queries and scripts manually as well as the use of visual database tools based on the Microsoft SQL Server Database Management System (DBMS).

As part of the course, students will develop a semester project as an exercise of the concepts covered in the lecture. Students are expected to have a proficiency in at least one programming language such as C, C++, Java, Visual Basic, or C# for the semester project.

3 Lecture Schedule

The course lectures are structured in the following way. The relevant chapters for the Ramakrishnan and Gehrke (RG) book are shown below. There are also references to the Silberschatz, Korth, and Sudarshan (SKS) and Elmasri and Navathe (EN) books as listed in the indicated column.

#	Date	Subject	RG	SKS	EN
1	20 Oct	Course Overview, Intro to Databases	1.1–1.5	1	1, 2
2	27 Oct	Intro 2, ERD 1	1.5-2	1, 6.1–6.7	3,4
3	3 Nov	ERD 2	2	6.1–6.7	3,4
4	10 Nov	Relational Model 1	3	2.1, 3.1–3.3, 3.9–3.10	7.1–7.5
5	17 Nov	Relational Model 2	3	2.1, 3.1–3.3, 3.9–3.10	7.1–7.5
6	24 Nov	Translating from ERD	3.5	6.9	9.1–9.2
7	1 Dec	SQL Query Basics	5.1–5.3	3.1–3.4	8
8	8 Dec	Relational Algebra	4.1–4.2	2.2–2.5	7.6,9.4
9	14-15 Dec	Nested and Aggregate Queries 1	5.4–5.4	3.5–3.7	8
10	22 Dec	SQL Queries Advanced 2	5.5–5.7	3.5–3.8	8
11	29 Dec	Assertions, Triggers	5.7-5.8	4.2, 8.6	8
12	5 Jan	Triggers, Stored Procedures	5.8-5.9,6.5	8.6, 4.6	
13	12 Jan	Transaction Management 1	16.1-16.3.2	15–16.1	19
14	19 Jan	Transaction Management 2	16.2-16.5	15–16.1	19

4 Quizzes

There will be (a maximum of) four in class short quizzes at the beginning of lectures during the course of the semester. The quizzes will take place from 12:00-12:10pm. There will be (a maximum of) one quiz during weeks 1-4, one between weeks 5-7, one between weeks 8-10, and one between weeks 11-14. The quiz material will come from the readings assigned for the lecture on which the quiz is given. Students will be told of the upcoming quiz **in class the week before the quiz**.

Students may skip or drop the grade of one of the quizzes without penalty. Students who miss a quiz due to Milium duty will be allowed to (additionally) drop the missed quiz.

Students who arrive in class after 12:10pm will not be given the opportunity to take the quiz.

4.1 Tentative Quiz Schedule

Quizzes will tentatively take place on the following dates and on the following material:

#	Date	Topic	Source (RG)
1	10 Nov	Entity Relationship Models	2
2	1 Dec	Relational Model	3
3	22 Dec	SQL Queries	5
4	12 Jan	Triggers, Stored Procedures	5.8-5.9, 6.5

The above dates may change during the course of the semester.

5 Assignments

Three or four assignments will be assigned during the course of the semester. The assignments will include some theoretical work, but also include a significant amount of hands on SQL programming. Students may work in groups of **up to three students** on the assignments.

More details on the assignments will be given during the course of the semester.

6 Student Projects

An important segment of the course is the student database project. Students will develop their database projects in teams of 2 or 3 students. Individual students may work alone if they choose.

In the first Targil of the course, the instructor will give an outline of the expected scope and size of the semester project along with a list of project suggestions, including those used in past years by students. Students may choose a project from the list or choose another topic. Only *one* team may work on a given project topic. Students must submit their topic choice for approval by **25 October**.

The student project will be developed in phases during the semester. As topics are covered in class, students will be required to submit the relevant documents, design, or code for their project submission:

Date	Project Phase	What is due	Weight
11 Nov	Entity-Relationship Diagrams	ERD for the project	25%
7 Dec	Relations	Relations, Keys based on the ERD	25%
30 Dec (6 Jan)	Views	Views for reports	20%
17 Jan	Active DB	Triggers, Stored Procedures	20%
20/24 Jan	Final Presentation and Report	Presentation and Report	5%
	Timeliness of submissions		5%

The project will be graded as a whole at the end of the semester after the final submission of the project with weights given to the individual parts as shown above. The dates shown above and the 5% “timeliness” grade are to help students pace themselves throughout the semester.

During the course of the semester, each group is expected to meet with the instructor during office hours to discuss each phase as it is submitted (at least four times, once per phase). During the meeting, the instructor will give feedback on the group’s work and guidance for what needs to be corrected or improved.

Each student team will present its project during the last Targil of the semester on 19 Jan. Each student team must have at least **one** representative at the 19 Jan lecture session to present their project. Teams who do not present their project will be assigned **0** points for the presentation phase of their project.

Students must also submit a project report including all design and development documents related to the project. A short user guide and self-evaluation section must be submitted as well.

At each phase in the project, detailed instructions about what is expected to be submitted will be given to the students and posted on the course information system.

7 Recitation and Laboratory Work

Exercise sessions are a combination of recitation and hands on experimentation sessions. Students may ask questions during the session and the instructor will answer all questions and issues posed.

Some exercise sessions will include a laboratory assignment due at the end of the session. Some will include a laboratory assignment due at the beginning of the following lecture period. Any laboratory assignment will be based on material covered in previous lecture or readings, not new material. The laboratory assignments will not be taken into consideration in the final grade.

8 Attendance

Students are responsible for all material presented in class, recitation, and laboratory sessions, all assigned readings, and all material provided for additional reading out of class.

Attendance of lectures and targil sessions is expected and required for this course. As per College policy, a student who misses 20% or more of the lectures of targil sessions may not be permitted to take the final exam. Attendance will be taken from time to time, but will not be taken directly into consideration in the calculation of the course grade. Students who miss lectures do so at their own risk and expense and will be expected to make up missed material on their own.

Students who know they will be missing two or more lectures due to circumstances beyond their control should inform the instructor as soon as possible before or after the fact to prevent misunderstandings or problems at the end of the semester.

Students who miss a lecture or targil are recommended to contact their classmates to get notes or find out what material was covered. The course syllabus and web page will also indicate the material covered and have the slide sets presented at all lectures.

8.1 Decorum

Students who attend lecture are expected to give their full attention to the material. Talking on cellular phones, text messaging, or other disturbing behavior will not be tolerated. Students who need to speak on the phone during lecture time or are expecting urgent messages *must* leave the classroom quietly, conduct their business, and return when they can participate fully in the class.

Students must arrive to lectures **on time, within the first 5 minutes of class**. As per college policy, the instructor reserves the right to expel from the classroom any student who enters more than 5 minutes late for lecture or who is disturbing others.

9 Submissions

9.1 How to Submit Work

To ensure timely submission of projects and work, students **may only submit work via the Telem system or in person**. Materials sent via email risk being ignored or ungraded without consideration of their merits. Technical issues with the Telem software should be directed to the information technology support staff in Kinneret College who will address them in a timely manner.

9.2 Late Submission Policy

Students are expected to be on time with their project submissions and assignments. Each assignment must be turned in by the date it is due.

Each student may turn in **one** assignment up to 7 days late without penalty. Subsequent assignments will be assessed a 20% penalty for up to 4 days late and a 30% penalty for up to 7 days late. After 7 days, any assignment will be accepted with a 60% penalty until January 24, the last day of classes in the semester, until the solutions are posted on line, or any date announced by the instructor.

Students who are called up to Miluim duty will have their assignment deadlines extended in accordance with college policy.

The project report is due by the end of January 24, 2010. Teams which do not submit their project and report by the end January 24, 2010 will be assessed late penalties as follows:

- Submitted up to the end of January 27, 2010 - 20% penalty
- Submitted up to the end of January 30, 2010 - 40% penalty
- Submitted up to the end of final exam Moed Bet date - 60% penalty

10 Exams

There will be a single exam at the end of the course. The final exam will be worth **60%** of the course grade and will be scheduled in accordance with the Mador Bechinot of Kinneret College. In accordance the School of Engineering rules, the final will be three (3) hours long, will cover all of the material in the course, and is a required element of the course grade.

11 Grading

Final grades will be calculated by combining grades from assignments, projects and exams. The grades are weighted as follows:

4%	Quizzes
18%	Assignments
18%	Semester Project
60%	Final Exam

The instructor will not address questions about specific individual grades during the lecture or review sessions. Students may contact the instructor *in person* during office hours or after the lecture/review sessions at the instructor's convenience.

Students may request a regrade for assignments or projects using the regrade request form found on the course web site. The instructor will regrade the entire item submitted, without prejudice to the grade previously assigned to it.

12 Books

The following book is used for the class:

Ramakrishnan, Raghu and Johannes Gehrke. *Database Management Systems*. McGraw Hill. 3rd Edition (2003) or later.

Additional books that may help students are:

Silberschatz, Abraham, Henry F. Korth, and S. Sudarshan. *Database System Concepts*. McGraw Hill. 5th Edition (2006) or later.

Ullman, Jeffrey D. and Jennifer D. Widom. *First Course in Database Systems*. Prentice Hall. 2nd Edition (2001) or later.

Date, C. J. *An Introduction to Database Systems*. Addison-Wesley. 6th Edition (1994) or later.

Elmasri, Ramez, Shamkant B. Navathe. *Fundamentals of Database Systems*. Addison-Wesley. Third Edition (2000) or later.

The library will have copies of the books listed, but students are **encouraged**, but not required, to purchase the books as needed.

13 Cheating

Cheating of any sort will not be tolerated. Student collaboration is encouraged, but within limits as set forth in the college's rules on academic integrity. Any students caught cheating will be immediately referred to the office of the Deacon and may receive a failing grade for the course.

Cheating includes:

- Copying information, content, or verbatim text to answer questions, solutions, or aid in programming projects from other students, internet sites, books (other than the ones listed in the bibliography), other other unaffiliated individuals.
- Copying source code **without attribution** from other students, **web sites**, online repositories, text books, open source programs, or other unaffiliated individuals.
- Other forms of academic misconduct as described on the site: www.vpul.upenn.edu/osl/acadint.html or as reasonably assessed by the instructor, program head, or deacon.

14 Contact Information

Instructor: Michael J. May
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Office Hour: Monday 10am-11am or by appointment