OHSU Online · School of Medicine

Databases

BMI-544

Winter 2020   3 Credits   01/06/2020 to 03/20/2020   Modified 11/25/2019

💻 Description

An in-depth look at databases and database management systems. Topics covered will include data modeling, hierarchical and relational databases, query languages (SQL), database optimization, and OLAP and data warehousing.

Prerequisite: No prerequisite, but prior completion of BMI 540 suggested.

Offering: On Campus: Winter; Online: Winter

Note: Enrollment limited to admitted Biomedical Informatics students.

This syllabus is forBMI 544 OL W20,BMI 644 OL W20

👤 Contact Information

Michael Lieberman, MD, MS

liebermm@ohsu.edu

🕐 Meeting Times

This course is fully online.

📑 Materials

Required Textbook

Databases Illuminated, Third Edition

Catherine M. Ricardo, PhD

Susan D. Urban, PhD

Jones & Bartlett Learning 2017

SBN-13: 9781284056945

ISBN-10:1284056945

New class material will be posted each week on Wednesdays.

Computing Requirements

Students will be required to install specified database systems during the quarter.

One assignment will require basic programming in Java or Python to access a MySQL database.

◎ Course Goals

📊 Course Competencies, Outcomes, and Objectives

✔ Assessment

There will be homework assignments based on lectures and reading assignments; late assignments will lose 10% or more depending on the number of days late unless prior permission is obtained.

There will be mid-term and final examinations. Weighting is

50% Homework assignments

25% Mid-term examination

25% Final examination

Course Grading Policy

Final grades are determined at the end of the quarter and usually are assigned as follows:

A	94 – 100
A-	90 – 93
B+	87 – 89
B	83 – 86
B-	80 – 82
C+	77 – 79
C	73 – 76
C-	70 – 72
D/F	< 70

💬 Course & Instructor Evaluations

📅 Schedule

Weekly Topics

The schedule below is tentative.

Week	Topics	Assignments
1	Introduction to database concepts	Assignment 1
2	The entity-relationship model	Assignment 2
3	The relational model	Assignment 3
4	Introduction to SQL	Assignment 4
5	Normalization and denormalization	Mid-term
6	Transaction management and distributed databases	Assignment 5
7	Data warehouses and data mining	Assignment 6
8	Big data and NoSQL	Assignment 7
9	SQL programming and Internet considerations	Assignment 8
10	Case study: heart failure quality measures	None
11		Final examination

✳ Course Policies and Resources

🏛 School Policies and Resources

Graduate Studies Guidelines:

Students are responsible for following all OHSU School of Medicine, Graduate Studies, and program/department guidelines & policies. For more information, please visit here (https://www.ohsu.edu/xd/education/schools/school-of-medicine/academic-programs/graduate-studies/admin-resources.cfm). For program/department guidelines & policies, please inquiry with the program/department director and/or coordinator.

School of Medicine Conduct Policy (housed under the graduate studies guidelines section)

Students are responsible for their own academic work. Students are expected to have read and practice principles of academic honesty, as presented in the Graduate Studies Student Handbook. (http://www.ohsu.edu/xd/education/schools/school-of-medicine/academic-programs/graduate-studies/admin-resources.cfm)

The School of Medicine reserves the privilege of retaining only those students who, in the judgement of the faculty, satisfy the requirements of scholarship and clinical performance necessary to maintain the highest standards. The Student Handbook has information about academic standards and probation and dismissal policies.

Grading Criteria, Academic Standards, & Release of Final Grades:

Graduate Studies in the OHSU School of Medicine is committed to providing grades to students in a timely manner. Course instructors will provide students with information in writing at the beginning of each course that describes the grading policies and procedures including but not limited to evaluation criteria, expected time needed to grade individual student examinations and type of feedback they will provide.

All coursework applied towards degree requirements must meet the minimum cumulative grade point average of at least 3.0.

Refer to the School of Medicine Graduate Studies Forms & Policies for withdraw, incomplete, and in-progress grading standards. Final course grades will be posted with the OHSU Registrar the Monday following the last day of the term. On those occasions when a grade has not been submitted by the deadline, the following procedure shall be followed:

1. The Department*/Program** Coordinator will immediately contact the Instructor requesting the missing grade, with a copy to the Program Director and Registrar.
2. If the grade is still overdue by the end of next week, the Department*/Program** Coordinator will email the Department Chair directly, with a copy to the Instructor and Program Director requesting resolution of the missing grade.
3. If, after an additional week the grade is still outstanding, the student or Department*/Program** Coordinator may petition the Office of Graduate Studies for final resolution.

*For courses that are run by a specific department.

**For the conjoined courses (course number is preceded by CON) that are run by Graduate Studies.

Graduate Studies Inclement Weather Procedures

Inclement weather procedures can be found here (http://www.ohsu.edu/xd/about/visiting/weather/index.cfm). In the case of inclement weather, the faculty member will email or place a voice-mail greeting on her/his office telephone number by 6:00am on the day of the clinical or class to give instructions to students about the class schedule.

Graduate Studies Copyright Information

Every reasonable effort has been made to protect the copyright requirements of materials used in this course. Class participants are warned not to copy, audio, or videotape in violation of copyright laws. Journal articles will be kept on reserve at the library or online for student access. Copyright law does allow for making one personal copy of each article from the original article. This limit also applies to electronic sources.

DMICE Communication Policy

1. If the syllabus directs the student to contact the TA before contacting the instructor, the student should do so. Otherwise, the student should contact the instructor and allow 2 business days (not including weekends) for a response.
2. If the student does not receive a response from the instructor within 2 business days, s/he should contact the TA (if there is one). When contacting the TA s/he should cc the instructor and Diane Doctor at doctord@ohsu.edu.
3. If a student does not receive a response from the TA within 1 business day (not including weekends), s/he should contact Diane Doctor at doctord@ohsu.edu and cc the instructor and the TA.
4. If Diane does not reply within 1 business day (not including weekends), the student should contact Andrea Ilg at ilgan@ohsu.edu.
5. Students having difficulties with Sakai should contact the Sakai Help Desk at sakai@ohsu.edu or at (877) 972-5249. Sakai help is available M-F from 8am to 10-pm and weekends from Noon to 5pm. Do not contact the instructor.

When Problems Arise

It is critical to contact the appropriate person when problems arise:

- For basic Sakai problems and course issues (e.g., cannot log in, after-hours technical assistance, Course Materials or Forum not available/accessible during regular business hours/days), contact the Sakai Help Desk: Toll-Free - (877) 972-5249; email - sakai@ohsu.edu. Sakai help is available M-F from 8 am to 9 pm and weekends from Noon to 5pm.

- For questions about course content (e.g., do not understand a topic or disagree with homework quiz answer), contact the Teaching Assistant, who will be announced at the beginning of the course: go to the Email Tab after logging into the course

and choose "Associate" role to send message to the TA or post a question in the Forums.

Examination Policy

It is OHSU policy that any exam offered online and worth more than 10% of the final course grade must be virtually proctored. In this course, we will be using the services of Examity, a remote proctoring services company. You will be required to schedule your exam three (3) weeks ahead of time. There is no cost to the student. More information will be provided to you regarding setup, scheduling, and requirements in the Course Materials.

[Policy number: 02-70-050 ((http%3A/www.ohsu.edu/xd/education/student-services/academic-programs-and-assessment/academic-policy/approved-policies/upload/Online-Exam-Proctoring-02-70-050.pdf))](http://www.ohsu.edu)

Turn It In

In an effort to uphold the principles and practice of academic honesty, faculty members at OHSU may use originality checking systems such as Turnitin to compare a student's submitted work against multiple sources. To protect student privacy in this process, it will be necessary to remove all personal information, i.e. student name, email address, student u-number, or any other personal information, from documents BEFORE submission.

Sakai and TLC Help Desk

You will learn through the Sakai learning management software at http://sakai.ohsu.edu. () The online component includes reading material, lectures (including streaming presentations and handouts), project material, learning assignments, and online discussions. If you have any technical questions or if you need help logging in, please contact the Sakai Help Desk, which is open Mon – Fri, 8 am – 9 pm and weekends 12 pm – 5 pm, Pacific Time.

Contact Information:

(Toll-free) 877-972-5249

(Web) http://atech.ohsu.edu/help

(Email) sakai@ohsu.edu (mailto:sakai@ohsu.edu)

Online Etiquette

Please use professional etiquette when communicating with peers and the instructor. This means avoiding aggressive or offensive language, showing respect for others' opinions and positions, and conducting yourself as if you were face to face with them. Please pay special attention to etiquette in class forums and when using email. If you notice someone violating this policy, please make the instructor and TA aware of the problem.

✳ School Competencies

🌐 OHSU Competencies

List of OHSU Graduation Core Competencies

1. Professional Knowledge and Skills
2. Reasoning and Judgement
3. Evidence-Based Practice and Research
4. Lifelong Learning
5. Communication
6. Professionalism and Ethics
7. Teamwork
8. Safety and Quality Improvement
9. Systems
10. Patient/Client-Centered Care (Clinical)

To access a descriptive list of OHSU Graduation Core Competencies: OHSU Graduation Core Competencies (https://www.ohsu.edu/sites/default/files/2019-05/OHSU-Graduation-Core-Competencies.pdf)

🏛 Institutional Policies and Resources

Statement Regarding Students with Disabilities:

OHSU is committed to inclusive and accessible learning environments in compliance with federal and state law. If you have a disability or think you may have a disability (mental health, attention-related, learning, vision, hearing, physical or health impacts) contact the Office for Student Access at (503) 494-0082 or OHSU Student Access (mailto:studentaccess@ohsu.edu) to have a confidential conversation about academic accommodations. Information is also available at Student Access Website (http://www.ohsu.edu/student-access). Because accommodations may take time to implement and cannot be applied retroactively, it is important to have this discussion as soon as possible.

Portland State students also have similar resources available via the PSU Disability Resource Center (website http://www.pdx.edu/drc (http://www.pdx.edu/drc)). Please contact the DRC at tel. (503) 725-4150 or email at drc@pdx.edu (mailto:drc@pdx.edu)

Student Evaluation of Courses:

Course evaluation results are extremely important and used to help improve courses and the learning experience of future students. Responses will always remain anonymous and will only be available to instructors after grades have been posted. The results of scaled questions and comments go to both the instructor and their unit head/supervisor. Refer to Student Evaluation of Courses and Instructional Effectiveness, *Policy No. 02-50-035 (https://o2.ohsu.edu/policies-and-compliance/ohsu-policy-manual/chapter-2-student-affairs/ohsu-policy-02-50-035.cfm).

*To access the OHSU Student Evaluation of Courses and Instructional Effectiveness Policy, you must log into the OHSU O2 website (https://o2.ohsu.edu/).

Copyright Information:

Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). To help you familiarize yourself with copyright and fair use policies, the University encourages you to visit its Copyright Web Page (https://www.ohsu.edu/xd/education/library/services/copyright/)

Sakai course web sites contain material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material. You may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that you (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Syllabi Changes and Retention:

Syllabi are considered to be a learning agreement between students and the faculty of record. Information contained in syllabi, other than the minimum requirements, may be subject to change as deemed appropriate by the faculty of record in concurrence with the academic program and the Office of the Provost. Refer to the *Course Syllabi Policy, 02-50-050. (https://o2.ohsu.edu/policies-and-compliance/ohsu-policy-manual/chapter-2-student-affairs/ohsu-policy-02-50-050.cfm)

*To access the OHSU Course Syllabus Policy, you must log into the OHSU O2 website (https://o2.ohsu.edu/).

Commitment to Diversity & Inclusion:

OHSU is committed to creating and fostering a learning and working environment based on open communication and mutual

respect. If you encounter sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, veteran's status, ancestry, sex, marital status, pregnancy or parenting status, sexual orientation, gender identity, disability or any other protected status please contact the Affirmative Action and Equal Opportunity Department at 503-494-5148 or aaeo@ohsu.edu (mailto:aaeo@ohsu.edu). Inquiries about Title IX compliance or sex/gender discrimination and harassment may be directed to the OHSU Title IX Coordinator at 503-494-0258 or titleix@ohsu.edu. (mailto:titleix@ohsu.edu.)

Modified Operations, Policy 01-40-010:

Portland Campus: Marquam Hill and South Waterfront

Students should review O2 or call OHSU's weather alert (https://www.ohsu.edu/xd/about/visiting/weather/) line at 503-494-9021 for the most up-to-date information on OHSU-wide modified operations which include but are not limited to delays or closures for inclement weather.

If your home institution is not on the Portland campus (Marquam Hill or South Waterfront, contact your home institution for more information.

OHSU Resources Available to Students*:

Registrar's Office
Mackenzie Hall, Rm. 1120
503-494-7800; Email the Registrar (mailto:regohsu@ohsu.edu)

Student Registration Information:
To Register for Classes (http://www.ohsu.edu/xd/education/student-services/registrar/registration-information/index.cfm)

OHSU ITG Help Desk
Regular staff hours are 6 a.m. to 6 p.m., Monday through Friday, but phones are answered seven days a week, 24 hours a day. Call 503 494-2222.

Teaching and Learning Center
Academic Support Counseling and Sakai Course Management System, please contact the TLC Help Desk at 877-972-5249 or email TLC Help Desk (mailto:sakai@ohsu.edu)

Concourse Syllabus Management
For help with accessing your Concourse Syllabus: Please contact the Sakai help Desk for all other Concourse inquiries please visit the Concourse Tutorial Website (https://o2.ohsu.edu/educational-improvement-and-innovation/concourse-syllabus-management.cfm) or please contact the Mark Rivera at rivermar@ohsu.edu (mailto:rivermar@ohsu.edu)or call 503-494-0934

Public Safety

OHSU Public Safety-Portland Campus (Marquam Hill and South Waterfront) (https://www.ohsu.edu/xd/about/services/public-safety/)

- Emergency on Campus: 503-494-4444 (Portland)
- Non-emergency: 503-494-7744; Contact Public Safety (mailto:pubsafe@ohsu.edu)

*Joseph B. Trainer Health & Wellness Center
Baird Hall, Rm. 18 (Primary Care) and Rm. 6 (Behavioral Health)
503-494-8665; For urgent care after hours, 503-494-8311 and ask for the Nurse on call.
Wellness Center Information (mailto:askjbthealth@ohsu.edu)
Wellness Center Website (http://www.ohsu.edu/xd/education/student-services/joseph-trainer-health-wellness-center/)

If your home institution is not on the Portland campus, contact your home institution student support services for more information.

Ombudsman Office
Gaines Hall, Rm. 117
707 SW Gaines Street, Portland, OR 97239

503-494-5397; Contact Ombudsman (mailto:graybill@ohsu.edu); Ombudsman Website (https://www.ohsu.edu/xd/about/services/ombudsman/)

Library: Biomedical Information Communication Center
BICC Library Hours of Operation (http://www.ohsu.edu/xd/education/library/about/hours.cfm)

Additional Items