



Department of Health Administration and Policy
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SYLLABUS HI 671
 SPRING 2026

Course number and section:	HAP 671-001
Course title:	Healthcare Databases
Class schedule:	Time: 7:30 pm - 10:00 pm on Tuesdays
Location:	Location: Peterson Hall 1106
	Duration: Jan 20th, 2026 – May 5th, 2026
Course placement	(X) Core () Concentration () Elective () Pre-requisite(s) () Course(s) recommended before taking this course:
Instructor:	Abdul Hafeez, PhD Office hours: R: 4:30 PM – 5:30 PM or as needed (Email appointment) Location: Peterson Hall room no: 4415 Email: ahafeez7@gmu.edu
Collaborate – Sync Sessions:	This is face to face class and we meet in-Person every Monday. However, if the University is closed (for example due to inclement weather), the class will not be canceled but rather it will be held online through Canvas
Course Description:	Introduces students to design and query health databases. Provides hands-on experience with design, maintain, and implement queries of databases. Explores the uses of health record systems. Includes review and analysis of databases and database management systems. Examines the application of databases to clinical and business transactions
Course Objectives:	Upon completion of the course, students will be able to: <ul style="list-style-type: none"> • Effectively manage healthcare information using MS SQL database tool • Design healthcare databases • Structure queries and reports to describe complex relationships between fields in healthcare databases • Optimize data structures and tables that eliminate duplication, unnecessary data entry, and confusion • Import, export, and link data tables across platforms • Merge, analyze, and query healthcare databases to produce new information
Required Text:	No required textbook. Required reading is posted to the web.
Course Requirements:	<ul style="list-style-type: none"> • The course combines lectures with learning practical database skills. • No prior computer, programming, or database knowledge is assumed. • Needed skills will be presented in the class and assignments. • Weekly assignments, midterm exam, and the final exam/project require implementation of working MS Server database systems.

	<p>Most exercises will be done using SQL Server. As registered GMU students, you can legally download MS software for free. Microsoft software downloads can be accessed via the following link: http://hi.gmu.edu/software/ <i>Note that there is no MS Server for Mac computers – you have to run Windows Operating System on Mac computers to do assignments and exams. This may require the installation of additional software. Tutorials will be provided in class.</i></p> <p>Rules and Expectations:</p> <ul style="list-style-type: none"> • Assignments and exams will be given on the course site on the Blackboard • All activities/assignments completed and received by the due date will have grades posted in this course’s Blackboard Grade Center within 14 days of the due date. • Late submissions may be penalized up to 20%. • All the works (assignment and exam) must be submitted via Blackboard before the due date. <i>Works that are not submitted in Blackboard won’t be graded.</i> • Students are responsible for assigned readings, class content, and material. You are expected to arrive at class on time, stay for the duration of the class, and contribute actively. • Students are responsible for checking GMU email regularly, including SPAM/JUNK folders. Remove old messages, to prevent your mailbox from filling up! Assignments, comments, and additional 	
Teaching Methods:	(X) Lecture (X) Group work () Independent research () Fieldwork () Papers () Guest speakers () Student presentations () Case Studies (X) Lab (X) Class discussion () Other	
Evaluation and Grading	Midterm exam 20% Assignments 40 % Teach One 10% Final exam/project 30%	Grading rubrics: <ul style="list-style-type: none"> • technical quality • presentation clarity
Grading Scale:	96+ A 90-95 A - 86-89 B + 74-85 B 70-74 C 70- F	
Course Materials and Student Privacy	Video recordings (as needed) of class meetings that are shared only with the instructors and students officially enrolled in a class do not violate FERPA or any other privacy expectation. Video recordings that only include the instructor (no student names, images, voices, or identifiable texts) may be shared without violating FERPA (but see below, University Policies: Privacy, for some qualifications and recommendations) All course materials posted to Blackboard or other course sites are private to	

	<p>this class; by federal law, any materials that identify specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class.</p> <p>Video recordings — whether made by instructors or students — of class meetings that include audio, visual, or textual information from other students are private and must not be shared outside the class</p> <p>Live video conference meetings (e.g., Collaborate or Zoom) that include audio, textual, or visual information from other students must be viewed privately and not shared with others in your household or recorded and shared outside the class</p>
<p>Course expectations:</p>	<p>Log-in Frequency: Students must actively check the course Blackboard site and their GMU email for communications from the instructor, class discussions, and/or access to course materials at least 2 times per week.</p> <p>Participation: Students are expected to actively engage in all course activities throughout the semester, which includes viewing all course materials, completing course activities and assignments, and participating in course discussions and group interactions.</p> <p>Under no circumstances, may students participate in online class sessions (either by phone or Internet) while operating motor vehicles. Further, as expected in a face-to-face class meeting, an online participation requires undivided attention to course content and communication.</p> <p>Technical Competence: Students are expected to demonstrate competence in the use of all course technology. Students who are struggling with technical components of the course are expected to seek assistance from the instructor and/or College or University technical services.</p> <p>Technical Issues: Students should anticipate some technical difficulties during the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.</p> <p>Workload: Please be aware that this course is not self-paced. Students are expected to meet specific deadlines and due dates listed in the Course Schedule section of this syllabus. It is the student's responsibility to keep track of the weekly course schedule of topics, readings, activities, and assignments due.</p> <p>Instructor Support: Students may schedule a one-on-one meeting to discuss course requirements, content, or other course-related issues. Those unable to come to a Mason campus can meet with the instructor via telephone or web conference. Students should email the instructor to schedule a one-on-one session, including their preferred meeting method and suggested dates/times.</p>
<p>Academic Integrity:</p>	<p>The complete Honor Code is as follows: <i>To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and</i></p>

	<p><i>with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:</i></p> <p>Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.</p> <p><i>(From the 2015-16 Catalog – catalog.gmu.edu)</i></p>
Individuals with Disabilities:	<p>The Office of Disability Services (ODS) collaborates with students with documented disabilities and faculty to provide reasonable accommodations, auxiliary aids, and support services that are individualized and based upon medical documentation, functional limitations, and a collaborative assessment of needs. In order to receive accommodations, students must complete the following process: http://ods.gmu.edu/students/services.php</p>
Diversity and Inclusion	<p>The College of Health and Human Services, Department of Health Administration and Policy, an intentionally inclusive community, promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and ability status.</p> <ul style="list-style-type: none"> • We value our diverse student body and desire to increase the diversity of our faculty and staff. • We commit to supporting students, faculty, and staff who have been the victims of bias and discrimination. • We promote continuous learning and improvement to create an environment that values diverse points of view and life experiences. • We believe that faculty, staff, and students play a role in creating an environment that engages diverse points of view. • We believe that by fostering their willingness to hear and learn from a variety of sources and viewpoints, our students will gain competence in communication, critical thinking, and global understanding, and become aware of their biases and how they affect their interactions with others and the world. <p>[This statement was created by the School of Integrative Studies faculty]</p>
Sexual Harassment, Sexual Misconduct, and Interpersonal Violence	<p>George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students and employees who believe that they have been sexually harassed, sexually assaulted, or subjected to sexual or interpersonal misconduct to seek assistance and support. University Policy 1202: Sexual Harassment and Misconduct speaks to the specifics of Mason’s process, the resources, and the options available to students and employees.</p>
Email and Blackboard:	<p>Web: masonlive.gmu.edu</p> <p>Mason uses electronic mail to provide official information to students. Examples include notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and</p>

instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly. Students are also expected to maintain an active and accurate mailing address in order to receive communications sent through the United States Postal Service.
(From the 2015-16 Catalog – catalog.gmu.edu)

COURSE SCHEDULE

Week /Date:	Topics
Week 1/ Jan 20	<p>Topic: Introduction to Healthcare Databases, Software Installation</p> <p><i>All assignments, exams, and due dates are given on the Blackboard course site. Assignments due a day before the next class. You must submit your work in BB for grading. If your work is not in BB, then you don't have a grade for that work.</i></p>
Week 2	Topic: Basic SQL commands
Week 3	Topic: Tables and Records Data Cleaning
Week 4	Topic: EHR Models Relationships & Keys
Week 5	Topic: Specifying system requirements Data modeling (ER diagram)
Week 6	Topic: Normalization of databases Midterm Review
Week 7	<p>MIDTERM EXAM (take home) No class this week Students may use the classroom to finish the exam.</p>
Week 8	Topic: Queries, Aggregation, Functions
Week 9	Topic: SQL for Predictive Models
Week 10	Topic: Evaluations of Prediction
Week 11	Topic: Nested Queries
Week 12	Topic: Query Optimization
Week 13	Topic: T-SQL Programming Advanced Topics
Week 14	Final Review

Week 15

FINALTERM EXAM (In-class Exam)

The exam will be in-class on May 5th, 7:30 PM – 8:30 PM