MET CS 669 Design and Implementation for Business
2025 Fall 2 Online Course Syllabus

Instructor

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Course Duration

Start: October 28, 2025
End: December 16, 2025

Course credits

4 credits

Course Description

This course uses the latest database tools and techniques for persistent data and object-modeling and management. Students gain extensive hands-on experience with exercises and a term project using Oracle, SQL Server, and other leading database management systems. Students learn to model persistent data using the standard Entity-Relationship model (ERM) and how to diagram those models using Entity-Relationship Diagrams (ERDs), Extended Entity-Relationship Diagrams (EERDs), and UML diagrams. Students learn the standards-based Structured Query Language (SQL) and the extensions to the SQL standards implemented in Oracle and SQL Server. Students learn the basics of database programming, and write simple stored procedures and triggers.

The Role of this Course in the MSCIS Online Curriculum

This is a core course in the MSCIS online curriculum. It provides students with an understanding and experience with database technology, database design, SQL, and the roles of databases in enterprises. This course is a prerequisite for the three additional database courses in the MSCIS online curriculum, which are CS674 *Database Security*, CS699 *Data Mining and Business Intelligence* and CS779 *Advanced Database Management*. By taking these three courses you can obtain the Concentration in Database Management and Business Intelligence. CS674 *Database Security* also satisfies an elective requirement for the *Concentration in Security*. CS779 *Advanced Database Management* covers advanced design and normalization, ANSI and Oracle extensions to the relational model, object-oriented and object-relational databases, XML in databases, advanced database tuning, emerging database technologies, and other more advanced database topics.

Course Learning Objectives

This course will enable you to:

- Explain database concepts, particularly the concepts of relational databases
- Design and implement SQL databases of ordinary complexity
- Explain and use top-down database design with bottom-up techniques
- Understand and use basic object-oriented design techniques and the EERD notation.
- Understand and use the Structured Query Language—DDL, DML and DCL.
- Write simple stored procedures and triggers using PL/SQL or Transact-SQL
- Use and develop application databases.

Learning Outcomes

By reading the lectures and completing the assignments in this course, you will be able to:

- Understand and explain the roles that databases play in organizations.
- Normalize database tables so that you can design and implement correct database systems.
- Understand and use the Structured Query Language (SQL) in depth and obtain ample hands-on practice.
- Understand and use database transactions and concurrency.
- Create a Term Project that covers all aspects of designing a database and the SQL requests that run against that database.

Course Materials

Recommended Books

Coronel, C., & Morris, S. (2023). Database Systems: Design, Implementation, & Management (14th ed.). Cengage Learning.
ISBN: 9780357673034.

Welcome To First Day™ Delivery For Your Course

To enhance your learning experience and simplify access to the right materials for your class, your course materials have been integrated directly into your course.

Benefits of The Program

- Exclusive preferred pricing
- Guaranteed the right materials
- Single Sign-On
- Ready to go on day one
- Course materials charge will be placed on your student account
- Option to Opt-Out on the first day of class.

Accessing Your Materials

To access the required materials for your course, click on *Course Materials (Barnes & Noble)* in the left-hand menu in Blackboard. To navigate back to the course, click on the course title at the top left of your Blackboard screen.

Boston University will bill you at the discounted price as a course charge for this course. Please be advised it is NOT recommended that you Opt-Out, as these materials are required by your professor to complete the course. You can choose to Opt-Out on the first day of class, but you will be responsible for purchasing your course materials at the Opt-Out price.

For more information and FAQs visit Barnes and Noble at Boston University customer care page.

You may opt out of the First Day Program if you wish, and you may use **either the 13th or 14th edition** of the textbook.

Different page numbers for each edition will be indicated in the Study Guide.An e-book is available at Vitalsource.com. An e-book is available through Amazon. The MindTap software, which comes with some versions of this text, is not required.

Required Software: Oracle, Microsoft SQL Server, or PostgreSQL

You will need Oracle, Microsoft SQL Server, or PostgreSQL to complete the labs and the Term Project. There is full support for these databases in the course, and Oracle is the default if you do not have a preference. Your choice of database for this course does not limit your options for other courses in the BU program, as material for other courses is not designed with an assumption that you select any particular database in this course. Please be sure to follow the instructions in the appropriate install guide listed below, because database installs are more complex than typical application installs.

Installation guides can be found in the Syllabus and Resources folder in your Blackboard course.

Recommended Software: LucidChart or Microsoft Visio Pro

In this class we will demonstrate the use of **LucidChart** and **Microsoft Visio Pro** to create entity-relationship diagrams. You can sign up for a free, full-featured account on LucidChart by using your BU email address. You can obtain Visio Pro free of charge from the Microsoft Imagine for

Academic Institutions program. Many students use LucidChart or Microsoft Visio to create their diagrams, but you are not required to do so. Any capable database diagramming application will suffice.

Metropolitan College is a member of Azure Dev Tools for Teaching (formerly Microsoft Imagine), a Microsoft program that supports technical education by providing access to most Microsoft software for learning, teaching, and research purposes. Our membership allows faculty and students currently enrolled in MET courses to obtain certain Microsoft products free of charge. All MET students are granted access to download the software for the duration of their study at MET College.

FAQ and basic information are at Microsoft Azure Dev Tools for Teaching.

If you choose to use LucidChart you will need to access it using your BU Google Apps account. Information can be found here to set up your Google Apps account.

For more information you can visit the Lucidchart section of the BU Techweb site.

Supplemental Live Sessions

In this class there will be Supplemental Live Sessions every week. Live Sessions provide you with an opportunity to listen to the course instructor or lead facilitator, and to ask questions in real-time. In many cases, the Live Sessions also provide you with step-by-step demonstrations of diagramming database designs, or writing specific kinds of SQL. The Live Sessions supports chat, voice conferencing over telephone or internet, and a variety of visual interaction facilities, including PowerPoint slides and even video if we choose to use it. All Live Sessions are recorded so that you will not miss a session if you are not able to attend.

I look forward to talking with you, discussing the material, and answering your questions, and encourage you to attend as many supplemental live sessions as you are able, to assist in your learning.

Live Offices

This course includes a “Live Office” for each facilitator, one for the course instructor, and one for student use. Live Offices are similar to Live Classroom, except for a few minor configuration differences. Live Offices are a good way for facilitators and students to go over their assignments or other course material, because it supports convenient document or web sharing and voice. If you plan to take advantage of Live Office sessions, I recommend that you purchase a headset designed to plug into the audio jacks or USB port on your computer. This will give you the ability to talk directly with your facilitator. These headsets are available from many vendors. The price ranges from $10 for a basic but serviceable model up to $50 for a professional model. You may alternatively telephone into the Live Classroom as you would to a conference call.

Module 1 Study Guide and Deliverables
(October 28 – November 2)

Readings:

Background Concepts Readings:

- Coronel & Morris, chapters 1 and 2

Optional SQL Readings:

- *13th Edition:* Coronel & Morris, sections 7.1 through 7.3 of chapter 7, sections 8.1 and 8.2 in chapter 8
- *14th Edition:* Coronel & Morris, Sections 7.1 through 7.3 of Chapter 7, Sections 8.1, 8.2, and 8.4 in Chapter 8

Assignments

- Term Project Iteration 1 due **Tuesday, November 4 at 6:00 AM ET**

Assessments

- Lab 1 Assessment due **Tuesday, November 4 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, October 28 from 7:30-9:30 PM ET**

Module 2 Study Guide and Deliverables
(November 4 – November 10)

Readings:

Background Concepts Readings:

- Coronel & Morris, chapters 3 and 4

Optional SQL Readings:

- *13th Edition:* Coronel & Morris, sections 7.4 through 7.6 of chapter 7, sections 8.3 and 8.4 in chapter 8 (note that 8.4b, subqueries, will be covered in more detail in week 5)
- *14th Edition:* Coronel & Morris, Sections 7.4 through 7.7 of Chapter 7, Section 8.3 in Chapter 8

Assignments

- Term Project Iteration 2 due **Tuesday, November 11 at 6:00 AM ET**

Assessments

- Lab 2 Assessment due **Tuesday, November 11 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 4 from 7:30-9:30 PM ET**

Module 3 Study Guide and Deliverables (November 11 – November 17)

Readings:

Background Concepts Readings:

- Coronel & Morris, chapter 5

Optional SQL Readings:

- *13th Edition:* Coronel & Morris, sections 7.7, 7.9, 7.10, and 7.11 of chapter 7 (note that section 7.8 regarding subqueries will be read in week 5). Section 8.5 of chapter 8
- *14th Edition:* Coronel & Morris, Section 7.8 of Chapter 7

Assignments

- Term Project Iteration 3 due **Tuesday, November 18 at 6:00 AM ET**

Assessments

- Lab 3 Assessment due **Tuesday, November 18 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 11 from 7:30-9:30 PM ET**

Module 4 Study Guide and Deliverables (November 18 – November 24)

Readings:

Background Concepts Readings:

- *13th Edition:* Coronel & Morris, chapter 6 and chapter 9 (only sections 9-1 through 9-3, and 9-8 through 9-9)
- *14th Edition:* Coronel & Morris, chapter 6 and chapter 9 (only sections 9-1 through 9-3)

Optional SQL Readings:

- *13th Edition: Coronel & Morris, sections 8.6 through 8.8 of chapter 8*
- *14th Edition: Coronel & Morris, Sections 8.6 and 8.7 of Chapter 8*

Assignments

- Term Project Iteration 4 due **Tuesday, November 25 at 6:00 AM ET**

Assessments

- Lab 4 Assessment due **Tuesday, November 25 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 18 from 7:30-9:30 PM ET**

Module 5 Study Guide and Deliverables (November 25 – December 1)

Readings:

Background Concepts Readings:

- *13th Edition:* Coronel & Morris, chapter 10 and chapter 11 (only sections 11.1 to 11.7)
- *14th Edition:* Coronel & Morris, chapters 10 and 11

Optional SQL Readings:

- *13th Edition: Coronel & Morris, section 7.8 of chapter 7*
- *14th Edition: Coronel & Morris, sections 7.9 through 7.12 of Chapter 7*

Assignments

- Term Project Iteration 5 due **Tuesday, December 2 at 6:00 AM ET**

Assessments

- Lab 5 Assessment due **Tuesday, December 2 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, November 25 from 7:30-9:30 PM ET**

Module 6 Study Guide and Deliverables (December 2 – December 8, 2025)

Readings:

Background Concepts Readings:

- There are no background concepts readings this week.

Optional SQL Readings:

- There are no SQL readings this week.

Assignments

- Term Project Iteration 6 due **Tuesday, December 9 at 6:00 AM ET**

Assessments

- Lab 6 Assessment due **Tuesday, December 9 at 6:00 AM ET**

Live Classrooms:

- **Tuesday, December 2 from 7:30-9:30 PM ET**

Course Evaluation:

Please complete the course evaluation once you receive an email or Blackboard notification indicating the evaluation is open. Your feedback is important to MET, as it helps us make improvements to the program and the course for future students.

Final Exam

The Final Exam is a proctored exam available from **Wednesday, December 10, 2025, at 6:00 AM ET to Saturday, December 13, 2025, at 11:59 PM ET**.

The Computer Science department requires that all final exams be administered using an online proctoring service, which you will access via your course in Blackboard. In order to take the exam, you are required to have a working computer, webcam, speakers, and microphone that meet the proctoring service's system requirements. A detailed list of those requirements can be found in the Proctored Exam Information module located on the course home page. Additional information regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your proctored exam session within the defined exam window.

Evaluation of Students and Grading

Course Structure

The course is organized as a sequence of six main weekly modules, plus a seventh module for the proctored final exam. Each of the six main modules includes assigned textbook readings and online lectures in text, graphic, and video formats. Students have an opportunity each week to participate in synchronous Live Classroom sessions where students interact with their faculty in real time; these live sessions are recorded for students who can’t make the live sessions. Each week’s module includes labs and term project iterations. The term project is completed incrementally and integrates the significant course elements through development of your own database.

Grade Weighting

The course grade will be computed from the following:

Deliverable	Weight
Term Project	40%
Labs	30%
Final Exam	30%

Term Project

For the term project, you will design and implement your very own database. You decide the direction of and kind of data your database will support. You do this incrementally by completing weekly term project iterations. Each term project iteration will be evaluated with a rubric specific to the iteration, which is available in each iteration’s document. Additional

details are available in the Assignments area of the course. Satisfactory completion of the Term Project is required to pass the course**.**

Failure to complete all iterations of the Term Project will result in an F for the course, regardless of the weighted average in the course.

Labs

There are weekly labs that teach you how to write code to interact with your database, and help you apply learned concepts. The labs begin with the assumption that you have not used SQL or databases before, and teach you step-by-step with numerous examples. Each lab will be evaluated with a rubric specific to the lab, which is available in each lab document..

Final Exam

There will be a proctored Final Exam in this course using a proctor service. Detailed instructions regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your own appointment.

Grade Computations

The course grade will be computed from the following:

- Assignments: 60%
- Draft Assignments (recommended, but optional): 6%
- Proctored Final Exam: 34%

Grading Structure

Your term project iterations, labs, and final exam will be graded on a percentage basis. The following table summarizes typical correspondence of percentage grades and letter grades for individual graded items.

Letter Grade	Percentage Grade Range	Grade Points
A	95–100	4.0
A–	90–94.9	3.7
B+	87–89.9	3.3
B	83–86.9	3.0
B–	80-82.9	2.7
C+	77–79.9	2.3

C	73–76.9	2.0
C–	70-72.9	1.7
D	60–69.9	1.0
F	0–59.9	0

Note that C is the lowest grade that satisfies degree requirements in graduate courses and that you need to maintain a grade point average of 3.0 or better to graduate. For more information, see the MSCIS Academic Policies online manual

How We Help You Succeed

We on the teaching team are eager to see you learn and succeed in the course. We treat each person with respect and professionalism, work hard to give everyone a great learning experience, and strive to be fair to everyone in the course. To these ends, the following describes how we structure the course to best help you.

Getting Help

The teaching team is here to help you. We are happy to answer your questions about the course material, course administration, course structure, and where to find the material for specific term project iteration and lab problems. We have an Ask the Teaching Team forum monitored by all facilitators where you may ask questions. We have many live sessions that help explain the material and give you a chance to ask questions in real-time. If you find that something is not covered in the material adequately, ask away! We are happy to help.

We do follow a policy whereby all items you submit must be authored by you. Facilitators do not provide solutions before submission, nor do they pre-grade submissions. We do however offer live sessions and recordings with problems similar to the term project iterations and labs, and we show you step-by-step how to solve them.

Researching

We strive to provide you many resources in the course, so that course materials provide for the bulk of your research. This includes the textbook, online lectures, live sessions, email communications, and your questions in the forum. You are free to use quality external sources are used as needed to fill in extra details. We do follow a policy that research should not include submissions from current or prior students on the same assignment or lab. We want each person in the course to go through the healthy struggle of answering each question, for the sake of learning, and do not want anyone to bypass the learning process by copying from others.

Including Others' Material

While most of your work will be written in your own words, it is reasonable to include others' work where it provides benefit. While we ask that there be a clear delineation between your own work and others' work through citations (such as APA style citations), we do not expect you to cite everything you write. It is only necessary to cite information that is not common knowledge in the field, or when you use verbatim quotes from others' material.

Interacting With Your Facilitator

Your facilitator is here to help you. We carefully select facilitators based upon their academic and industry experience, as well as their ability to positively interact with students. We also continually vet facilitators based upon feedback in course evaluations. Many of our facilitators have years of experience and a proven track record.

We follow a policy where each person in the course is assigned to a facilitator through a random assignment process, to help ensure fairness. We want to give you the best experience possible in the course, so if despite our efforts and process your facilitator engages in what you see as misconduct, please let the course instructor know. While course enrollees are not able to switch facilitators upon request, your instructor will work with you to remedy the situation in other ways.

Review Of Your Submissions

Your facilitator uses a grading rubric in combination with course experience to thoughtfully assign each item a fair and objective grade. The grades are calculated carefully with grading rubrics developed by the instructor and vetted over time, and this is combined with the course experience of your facilitator. Facilitators will see both areas needing improvement and areas the exhibit excellence in most submissions. You will receive feedback on both. We instruct facilitators to be respectful and kind in their words, and to accurately point out both areas. Dialoging about the review of your submissions is a great way to learn what worked well and what could be improved, and this is encouraged. Your facilitator is happy to further explain their comments and the reason for a grade determination, should something be unclear.

To be fair to all, the same grading process is used for every person in every group. Facilitators are not allowed to negotiate grades individually (contact your instructor if something is really off, of course).

Submission Schedule

We have a schedule of when term project iterations and labs must be submitted to keep the course running smoothly. If an item is submitted after its deadline, 5 points per day late will be deducted. Students may reach out to their facilitator for legitimate exceptions. We endeavor to be reasonable and equitable, recognizing the sacrifice necessary to keep pace with the

demanding schedule. Documentation may be required for exceptions; however, submissions over four days late are not accepted and will receive a 0.

Life-Impacting Events

While we wish for each person enrolled in the course to enjoy a regular, uninterrupted course term, we recognize that emergencies and other life-impacting events can happen while the course is running. Examples of such events are car accidents, a death in the family, the loss of a job, and other difficult events. We will do everything we can to support you in the course if this happens. Please reach out to the teaching team as soon as you are able to explain your situation and to open a dialog about your best course options. While we do not systematically require documentation for all situations, we may require it for some at our discretion.

Academic Conduct Code

Academic Integrity: Plagiarism is the passing off of another's words or ideas as your own, and it is a serious academic offense. Plagiarism and cheating also defeat the purpose of getting an education. Plagiarism and cheating cases will be handled in accordance with the disciplinary procedures described in the College of Arts and Sciences Academic Conduct Code. You are expected to know and abide by the code, which can be read online: Academic Conduct Code. Penalties range from failing an assignment or course (first offense) to suspension or expulsion from BU. If in doubt, cite your source. If you have any questions about academic integrity, please ask your instructor.

Incidents of academic misconduct will be reported to the Academic Conduct Committee (ACC). The ACC may suspend/expel students found guilty of misconduct.

Important Message on Final Exams

Dear Boston University Computer Science Online Student,

As part of our ongoing efforts to maintain the high academic standard of all Boston University programs, including our online MSCIS degree program, the Computer Science Department at Boston University's Metropolitan College requires that each of the online courses includes a proctored final examination.

By requiring proctored finals, we are ensuring the excellence and fairness of our program. The final exam is administered online.

Specific information regarding final-exam scheduling will be provided approximately two weeks into the course. This early notification is being given so that you will have enough time to plan for where you will take the final exam.

I know that you recognize the value of your Boston University degree and that you will support the efforts of the University to maintain the highest standards in our online degree program.

Thank you very much for your support with this important issue.

Regards,

Professor Lou Chitkushev, Ph.D.

Associate Dean for Academic Affairs

Boston University Metropolitan College

Who's Who: Roles and Responsibilities

You will meet many BU people in this course and program. Some of these people you will meet online, and some you will communicate with by email and telephone. There are many people behind the scenes, too, including instructional designers, faculty who assist with course preparation, and video and animation specialists.

People in Your Online Course in Addition to Your Fellow Students

Your Facilitator. Our classes are divided into small groups, and each group has its own facilitator. We carefully select and train our facilitators for their expertise in the subject matter and their excellence in teaching. Your facilitator is responsible for stimulating discussions in pedagogically useful areas, for answering your questions, and for grading homework assignments, discussions, term projects, and any manually graded quiz or final-exam questions. If you ask your facilitator a question by email, you should get a response within 24 hours, and usually faster. If you need a question answered urgently, post your question to one of the urgent help topics, where everyone can see it and answer it.

Your Professor. The professor for your course has primary responsibility for the course. If you have any questions that your facilitator doesn't answer quickly and to your satisfaction, then send your professor an email in the course, with a cc to your facilitator so that your facilitator is aware of your question and your professor's response.

Your Faculty and Student Support Administrator, Rachel Regis. Rachel is here to ensure you have a positive online experience. You will receive emails and announcements from Rachel throughout the semester. Rachel represents Boston University's university services and works for BU Virtual. She prepares students for milestones such as course launch, final exams, and course evaluations. She is a resource to both students and faculty. For example, Rachel can direct your university questions and concerns to the appropriate party. She also handles general questions regarding Online Campus functionality for students, faculty, and facilitators, but she does not provide tech support. She is enrolled in

all classes and can be contacted within the course through Online Campus email as it is running. You can also contact her by external email at bleug@bu.edu.

People Not in Your Online Course

Although you will not normally encounter the following people in your online course, they are central to the program. You may receive emails or phone calls from them, and you should feel free to contact them.

Your Computer Science Department Online Program Coordinator. The online program coordinator administers the academic aspects of the program, including admissions and registration. You can ask questions about the program, registration, course offerings, graduation, or any other program-related topic. The online program coordinator can be reached at metcsol@bu.edu or (617) 353-2566.

Your Computer Science Department Program Manager, Crystal Kelley. Crystal is responsible for administering most aspects of the Computer Science Department. You can reach Crystal at kelleycr@bu.edu or (617) 353-2566.

Andrew Gorlin, Academic Advisor. Reviews requests for transfer credits and waivers. Advises students on which courses to take to meet their career goals. You can reach Andrew at asgorlin@bu.edu, or (617)-353-2566.

Professor Guanglan Zhang, Computer Science Department Chairman. You can reach Professor Zhang at guanglan@bu.edu or at 617-358-2566.

Professor Lou T. Chitkushev, Associate Dean for Academic Affairs, Metropolitan College. Dr. Chitkushev is responsible for the academic programs of Metropolitan College. Contact Professor Chitkushev with any issues that you feel have not been addressed adequately. The customary issue-escalation sequence after your course facilitator and course faculty is Professor Temkin, and then Professor Chitkushev.

Professor Tanya Zlateva, Metropolitan College Dean. Dr. Zlateva is responsible for the quality of all the academic programs at Boston University Metropolitan College.

Disability and Access Services

In accordance with university policy, every effort will be made to accommodate students with respect to speech, hearing, vision, or other disabilities. Any student who may need an accommodation for a documented disability should contact Disability and Access Services at 617-353-3658 or at access@bu.edu for review and approval of accommodation requests.

Once a student receives their accommodation letter, they must send it to their instructor and/or facilitator each semester. They must also send a copy to their Faculty & Student Support Administrator, who may need to update the course settings to ensure accommodation is in place. Accommodation cannot be implemented if the students do not send their letters.