

Printable View of: Syllabus and Course Information

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File: Database Design and Implementation for Business

Course Description

MET CS 669

Database Design and Implementation for Business

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 following topics are covered:

- Database basics

- Installing and connecting to a database management system

- Relational database concepts

- Relational database design using ERD

- Normalizing database designs

- Database integrity

- Object-relational design using EERD

- The Structured Query Language (SQL) and practice using Oracle

- Advanced SQL

- The DBMS lifecycle

- Database transactions and concurrency

- Preview of advanced topics in databases including: performance tuning, data warehouses, and distributed databases.

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.

Technical Note

The table of contents expands and contracts (+/- sign) and may conceal some pages. To avoid missing content pages, you are advised to use the next/previous page icons in the top right corner of the learning modules.

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File: Course Objectives

Course 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.
Understand the basics of advanced topics such as database performance tuning, distributed databases, and the data warehouse.


File: Course Outline

Course Outline

The course parallels the fifteen chapters of our Coronel, Morris, & Rob text. There is at least one lecture corresponding to each chapter of the text, as well as lectures that cover additional material. The lecture numbers do not necessarily correspond to the chapter numbers in the text. One kind of additional lecture is the "hands-on" lecture, with readings from Chapter 7, in each of the first three modules. In the first two modules, we learn the fundamentals of databases and database design. With this foundation we are then prepared to learn about relational databases and entity-relationship models, and the basics of the Structured Query Language (SQL) In the third module we learn about how to validate our data models using normalization, and better ways to model specialization-generalization relationships. We devote our entire fourth module to SQL and a little database programming In the fifth module, while you work on your term projects we study the larger issues of the database design life cycle and also learn about transactions and concurrency. In the sixth module, we briefly introduce four more advanced topics while you complete your term projects. In each of the first six modules there is one review quiz (a self assessment with tutorial answers which does not count on your grade) and one quiz (which counts). The first three modules include hands-on lectures that guide us as we learn to use database management systems and SQL. In each of the modules you will complete term project tasks that are based on the material covered in that module.

Calendar Tool - You can see many due dates in the Vista calendar tool . You may add your own events there as well. However, please be aware that you may not find all of the important dates for the course listed there. You will stay current by checking announcements, discussions, and emails in the course.

Readings - Each week there are both textbook readings and online lectures . Your professor may suggest additional readings during the running of the course.

Discussion - There are weekly discussions  between you and your classmates. These discussions are moderated by your facilitator. Postings for each discussion should be completed by the assigned due dates. There are also general discussions boards, which are not graded, for you to use to discuss any issues with your classmates. Please see the Discussion Module on the home page for more details.

Assignment - There are assignments that are due throughout the courses and accessed from the Assignments menu item.

Assessments/Quizzes - Quizzes are also listed in the course calendar and accessed from the Assessments menu item.

Module 1 - Database Systems and Data Models

File systems and databases: data, information, databases, database management systems, data redundancy, database systems, DBMS functions, and connecting a client to the Oracle DBMS.

(Coronel, Morris, and Rob Chapter 1)

Data models: entities, attributes, relationships, business rules. Data abstraction, conceptual, internal, and external models. (Coronel, Morris, and Rob Chapter 2)

Hands on: Installing and connecting to a database management system; introduction to SQL, data definition commands (Coronel, Morris, and Rob Chapter 7 sections 7.1, 7.2, and 7.5)

Module 2 - Relational Databases and ER Models

The relational database model: tables, keys, integrity, operators, linking tables, data redundancy. The basics of SQL (Coronel, Morris, and Rob Chapter 3)

ER Modeling: Entities, Relationships, Weak, Recursive, Composite, Developing an ER Diagram. (Coronel, Morris, and Rob Chapter 4)

Hands on: SQL data manipulation commands, SQL SELECT queries (Rob and Coronel Chapter 7 sections 7.3, 7.4, and 7.6)

Module 3 - Normalization and Advanced Data Modeling

Normalization of database tables. Data redundancies, data anomalies, bottom up modeling of data using normal forms. 1NF, 2NF, 3NF, refinement, BCNF, and 4NF. (Coronel, Morris, and Rob Chapter 5)

Advanced Data Modeling: The extended entity relationship (EER) model, generalization, specialization, supertypes, subtypes, clusters, primary key selection, data modeling checklist. (Coronel, Morris, and Rob Chapter 6)

Hands on: Advanced SQL data definition commands and SELECT queries (Coronel, Morris, and Rob Chapter 7 sections 7.7 and 7.8)

Module 4 - Advanced SQL

SQL functions, Oracle sequences, updatable views, procedural SQL, triggers, stored procedures, embedded SQL. (Coronel, Morris, and Rob, chapter 8)

Database Design: systems development life cycle, database life cycle, database revisions, top-down versus bottom-up design, centralized versus decentralized design. (Coronel, Morris, and Rob Chapter 9)

Hands On: Library Schema Scripts

Module 5 - Database Design and Transaction Management and Concurrency Control

Transactions and concurrency control: locking, time stamping and data recovery. (Coronel, Morris, and Rob Chapter 10)

Database performance Tuning and Query optimization (Coronel, Morris, and Rob Chapter 11)

Module 6 - Preview of Advanced Topics

This module introduces performance tuning, distributed databases and data warehousing. CS 779 *Advanced Database Management* covers these topics as well as other advanced database topics in more detail. This week also provides you more time to concentrate on your term project.

Distributed Database Management Systems (Coronel, Morris, and Rob Chapter 12)

Business Intelligence and Data Warehouses (Coronel, Morris, and Rob Chapter 13)

Database Connectivity and Web Technologies (Coronel, Morris, and Rob Chapter 14)

Module 7 - Prepare for and take the final exam

You will prepare for and take the proctored final exam.

The course will remain open two weeks after the final exam, so that you can continue discussions and ask any questions about database technology, your grades or the course. This is also a time when we enter into a dialog where we endeavor to learn from you how we can modify the course so that it better meets your needs.

File: Instructor

Instructor

Warren Mansur

Computer Science Department
Metropolitan College
Boston University
808 Commonwealth Ave, 2nd floor
Boston, MA 02215

Email: mansur@bu.edu

Office Hours and Questions: You will have ample opportunity for questions at our many Live Classrooms. I also welcome your questions via Vista and standard email.



Hello,

My name is Warren Mansur, and I am your instructor. I welcome the opportunity to teach and interact with all of you. One of my goals in this course is to show you how exciting database design and implementation is, and how important it is for business today. I am passionate about teaching, and look forward to interacting with you in the many ways supported by this course.

I received my master's degree in computer science from Boston University, and my master's thesis was in the area of relational database design patterns. Since 2005, I have been heavily involved both with teaching and course development in Boston University's online MSCIS program. I have worked as an enterprise database and software architect and developer for 14 years with several organizations, including Lockheed Martin, Hewlett Packard, and the New York State Court System.

The best way to reach me outside of our many Live Classroom sessions is to email me within the course itself. If the course email is not available when you want to contact me, you can contact me at my main BU email address. I normally pick up my course and regular email many times per day.

Initial Course Developers

Dr. Robert Schudy

Dr. Schudy made significant contributions to all aspects of this course over many years. He has been practicing advanced database management in industry and teaching database classes in industry and at BU for years. His responsibilities as an Associate Professor in the MET Computer Science Department include faculty coordination of the database area and faculty coordination of this MSCIS online program.

He received a Ph.D. in Computer Science from the University of Rochester. He has conducted research and developed systems at Hewlett Packard Laboratories, and Bolt Beranek and Newman. He has served as chief scientist for startups and have architected designed and managed the development of many computer systems.



Dr. Vijay Kanabar

This course was originally developed by Professor Vijay Kanabar. Dr. Kanabar has been consulting and teaching in the applied areas of IT and Project Management for more than 25 years in the US and Canada. He has authored two database books—An Introduction to Structured Query Language (Wm C Brown now McGraw-Hill) and XBase for the True Beginner (McGraw-Hill)—and has been recognized with awards for outstanding teaching and research. He has substantial business experience and is frequently invited to present seminars at conferences organized by corporations such as Fidelity, BEA, Staples, Fleet and State Street. Dr. Kanabar holds graduate degrees in Computer Science from Florida Tech and a Ph.D. in Information Systems from University of Manitoba. Professor Kanabar and is a certified Project Management



Professional (PMP) and the author of a recent text on project management.

File: Study Guide

Study Guide

Module 1 Study Guide and Deliverables

- Readings:** Coronel, Morris, and Rob, chapters 1 and 2, and section 7.1 from Chapter 7
Notes for Chapter 2: Business rules (section 2.4) and the entity-relationship model (section 2.5.3) are used extensively in the course
- Discussions:** Discussion 1 postings end January 24 at 6:00 AM ET
- Assignments:** Assignments 1.0, 1.1, 1.2, and 1.3 due January 24 at 6:00 AM ET
- Term Project Milestones:** Read the term project specification
Decide if you are doing the default or student-defined term project and submit your decision in Assignment 1.3
- Assessments:** Quiz 1 due January 25 at 6:00 AM ET

Module 2 Study Guide and Deliverables

- Readings:** Coronel, Morris, and Rob, chapters 3, 4, and sections 7.2, 7.5, 7.3, 7.4, and 7.6 in Chapter 7
- Discussions:** Discussion 2 postings end January 31 at 6:00 AM ET
- Assignments:** Assignments 2.0, 2.1, 2.2, and 2.3 due January 31 at 6:00 AM ET
- Term Project Milestones:** Submit a conceptual entity-relationship diagram for your Term Project (Assignment 2.3)
- Assessments:** Quiz 2 due February 1 at 6:00 AM ET

Module 3 Study Guide and Deliverables

- Readings:** Coronel, Morris, and Rob, chapters 5 and 6, and sections 7.7 and 7.8 in chapter 7
- Discussions:** Discussion 3 postings end February 7 at 6:00 AM ET
- Assignments:** Assignments 3.0, 3.1, and 3.2 due February 7 at 6:00 AM ET
- Term Project Milestones:** Submit a normalized, logical entity-relationship diagram for your term project database (Assignment 3.2)
- Assessments:** Quiz 3 due February 8 at 6:00 AM ET

Module 4 Study Guide and Deliverables

- Readings:** Chapters 8 and 9 in Coronel, Morris, and Rob
- Discussions:** Discussion 4 postings end February 14 at 6:00 AM ET
- Assignments:** Assignments 4.0, 4.1, 4.2, and 4.3 due February 14 at 6:00 AM ET
- Term Project Milestones:** Provide the tables, data, and SQL which address an iterative subset of the situations in the Term Project description
- Assessments:** Quiz 4 due February 15 at 6:00 AM ET

Module 5 Study Guide and Deliverables

- Readings:** Chapter 10 and sections 11.1 to 11.7 in chapter 11, in Coronel, Morris, and Rob

- Discussions:** Discussion 5 postings end February 21 at 6:00 AM ET
- Assignments:** Assignments 5.0, 5.1, and 5.2 due February 21 at 6:00 AM ET
- Term Project Milestones:** This week you will provide the tables, data, and SQL which address an iterative subset of the situations in the Term Project description. If you are planning on developing stored procedures and/or triggers to exceed expectations, you may want to attempt one of each here.
- Assessments:** Quiz 5 due February 22 at 6:00 AM ET

Module 6 Study Guide and Deliverables


- Readings:** Chapter 12, sections 13.1-13.9 in chapter 13, sections 14.1 and 14.2 in chapter 14, sections 15.1-15.7 in chapter 15, in Coronel, Morris, and Rob
- Discussions:** There is no discussion
- Assignments:** The only assignment for this module is the term project due February 28 at 6:00 AM ET
- Term Project Milestones:** This week you will prepare your term project for final submission, making sure to add an exceeding expectations section as described in the Term Project description
- Assessments:** Quiz 6 due February 29 at 6:00 AM ET

Module 7 Study Guide and Deliverables

- Readings:** There are no new readings
- Discussions:** There is no discussion
- Assignments:** There is no assignment
- Term Project Milestones:** The term project is complete
- Assessments:** The Final Exam opens February 29 at 8:00 AM ET and closes at 11:59 PM ET on March 3. Please [click here](#) for more details on the exam.

Final Exam Details

The Final Exam is a proctored exam available from **February 29 at 8:00 AM ET to March 3 at 11:59 PM ET**. The Computer Science department requires that all final exams be proctored.

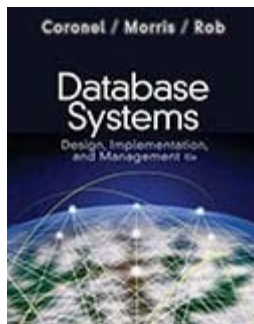
The exam is a three-hour, closed-book exam consisting of a combination of 50 multiple choice and true-false questions. It will be accessible during the final exam period. You can access it from either the Assessments  section of the course or from the Final Exam module on the home page. Your proctor will enter the password to start the exam.

Access to the online discussions and chat feature (but not the module contents), ends on February 29 at 8:00 AM ET and will be unavailable until March 4. Please plan accordingly.

You will receive a technical support hotline number before the start of the exam. Please bring this number with you to the exam.

File: Course Resources

Course Resources
Required Textbook



Coronel, C. M., Morris, S. & Rob, P. (2013). *Database systems: Design, implementation, and Management* (10th ed.). Boston: Cengage Learning.

This required textbook can be purchased from [Barnes & Noble at Boston University](#).

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[Download](#)

Recommended Textbooks

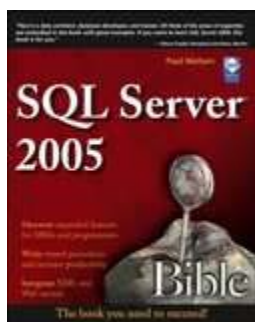
Students have the option to use Microsoft SQL Server (MSSQL) 2005 or 2008 for the exercises and term project in this class. (Microsoft SQL Server 2008 is preferred over 2005.) Students who choose to use MSSQL who are not highly skilled in MSSQL are urged to purchase one of the following two texts to help with material that is specific to MSSQL.



Murach's SQL Server 2008 for Developers

by Bryan Syverson and Joel Murach

ISBN-13: 978-1-890774-51-6



SQL Server 2005 Bible (Paperback)

by Paul Nielsen

Publisher: Wiley (November 6, 2006)

ISBN-13: 978-0764542565

Optional Reference Text



Oracle 11g: The Complete Reference

by Kevin Loney

Publisher: McGraw-Hill Osborne Media, 2008

ISBN-13: 978-0071598750

This is the standard Oracle reference. It includes excellent general SQL database tutorial material and extensive material on Oracle. You do not have to purchase this text for the course. There are no assignments from this text. This reference is here in case you want a good Oracle reference text. This is a required text for CS779 Advanced Database Management.

Required Software: Oracle or Microsoft SQL Server

You will need either Oracle or Microsoft SQL Server to complete the database assignments and the Term Project. Oracle is the default choice, so if you elect to use Microsoft SQL Server, please inform the professor at least a week before class opens, so that you can be assigned to an appropriate facilitator skilled in SQL Server. The best way for most students to access Oracle is to download it from the Oracle web site. The best way for most students to access SQL Server is to download the most recent release from MSDNAA, or to download the free Express version from Microsoft's web site. Most students with broadband access should be able to complete the download of the database with minimal difficulty. If you experience difficulties downloading the software, please contact your facilitator, who has the option of providing you with a copy of the database on a CD-ROM with overnight delivery.

Installation

Use the links below to download a PDF with the most recent version of the detailed instructions:

[Oracle Installation and Configuration Instructions
Installing SQL Server Developer 2008](#)

Asking for Help: Database management systems are more deeply integrated with the operating system than ordinary applications. Installations on compatible unmodified environments usually occur without significant issues. However, many things can go wrong, particularly with modified operating system environments. Don't feel embarrassed if something goes wrong. Unexpected events are common for database installations. If you encounter difficulties with the database when the course is running, just email your facilitator, so that he or she knows what difficulties you are experiencing. Do not put off the installation of Oracle or SQL Server, because we will need time to help you work through any difficulties that you encounter.

Oracle Advice: Any version of Oracle 9, 10, or 11 will work fine for this course, because we will make use only of the core database engine available equally in all of these versions of Oracle. If you are installing Oracle for the first time, and otherwise have no reason to install earlier versions of Oracle, it is advisable to install Oracle 11g as described in the installation guide, because it is the current version and has the most advanced installer.

SQL Server Advice: If you have difficulty installing the version of Enterprise version of SQL Server that is available from MSDNAA, it is recommended that you download and install the Express edition freely available from Microsoft's web site. In this course we will make use only of the core database engine available equally in the Express edition or the Enterprise edition.

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[Download](#)

Recommended Software: Microsoft Visio Pro 2010

In this class we will demonstrate the use of Microsoft Visio Pro 2010 to create entity-relationship diagrams. You can obtain Visio Pro free of charge from the Microsoft Developer Network Academic Alliance (MSDNAA) Program, to which the College subscribes. Most students use Microsoft Visio to create their diagrams, but you are not required to do so. Any capable database diagramming application will suffice. Please see the [next page](#) for more information on the MSDNAA program.

Web-Based Resource: Turnitin.com

As part of this course you have access to the Turnitin.com service (<http://turnitin.com>). You can submit your papers or anything that you wish to Turnitin, which compares the text that you submit with a large database of text from the web and other sources, including every paper that it has ever scanned. Turnitin uses artificial intelligence algorithms to identify text that may have been copied into a document or paraphrased without attributing the source. Your facilitators and I use Turnitin to verify that your work is original. You should consider submitting text that you find on the web to Turnitin before you include it as a reference, because you may find that it has been plagiarized, and you should reference the original source. You should run your term papers through Turnitin to verify that you didn't inadvertently incorporate someone else's work without properly referencing it. If you submit a paper to

Turnitin you will still need to submit it in the usual way through Vista. We routinely run term projects, assignments, and discussions through Turnitin, to verify that they are original and not copied from the web or elsewhere. All of the work which you submit, whether in exercises, discussion postings or term project, should be your own original writing, or quoted and properly referenced material from other original sources. There is a Turnitin discussion forum where you can discuss and learn about Turnitin and the amazing things that it does.

General Software

General software you will need to use in this and other online courses may include word processing, spreadsheet, and presentation software, such as Word, Excel, and PowerPoint found in Microsoft Office. You will also need to be comfortable with various aspects of using the Internet such as search engines, newsgroups, email, and file downloads.

Important Note

Students should retain the textbook(s) and any Oracle downloads or CD-ROMs for future courses in this program.

Live Classroom

In this class we will use the Horizon Wimba web-based Live Classroom. There will be Live Classroom sessions every week. Live Classroom sessions provide you with an opportunity to talk with the course instructor or lead facilitator and ask questions. Sometimes those questions are answered using slides or electronic whiteboard. In many cases, the Live Classrooms also provide you with step-by-step demonstrations of diagramming database designs, or writing specific kinds of SQL. The Live Classroom 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.

You do not need to be present when the Live Classroom is held to listen to and watch the sessions, because all Live Classroom sessions are recorded. If students are interested in material that is not already in the course I often prepare a lecture with slides and deliver it and record it using Live Classroom.

I look forward to talking with you, discussing the material, and answering your questions.

In order to participate in these discussions or to access the archived sessions, you will need to go to the Live Classroom link on your homepage (located near the bottom of the page) and complete the Setup Wizard. It is recommended you finish all of the login steps at least five minutes prior to the start of the synchronous discussion, so that you are fully prepared to access your live class session.

Live Classroom Instructions and Procedures

Complete instructions and procedures, as well as description of features and tools, for Live Classroom are available in the Student Orientation area.

Live Offices

This course includes a "Live Office" for each facilitator, one for Professor Schudy, 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.

Boston University Library Link

As Boston University students you have full use of the BU Library-even if you do not live in Boston. From any computer, you can access any of the library's resources that are electronically formatted-or better said, available online. Use this link <http://www.bu.edu/library/index.shtml> to access the library's

content whether you are connected through your online course or not, by confirming your status as a BU community member using your Kerberos.

Using the links on the right side of the page, you can find articles, eJournals, and eBooks, and you can easily search the library's content by subject. In addition, through the "Reference Shelf," you will have access to dictionaries, encyclopedias, handbooks, and more. If you are having difficulties gaining access, please consult the instructions below.

Connect to eResources

Boston University's Office of Information Technology and the Library offer an option for remote access to Boston University's online library resources.

Previously remote students had to use what was called the "ezproxy" library portal; the new access (still referred to as "ezproxy") allows all BU students a seamless connection to the BU Library's electronic resources through the link: www.bu.edu/library

If you are having difficulties gaining access through the library link you may want to go to www.bu.edu/library/research/connecting.html. From this page you can access material directly using the links near the top of the page, where you will see the note, "eResources include databases, ejournals, and ebooks." Additional information about the ezportal system is also available in the links lower on the page, under the heading "authentication as a BU community member."

For questions regarding connecting to the library, you may want to try the library's Frequently Asked Questions page at www.bu.edu/proxy/faqs.html.

Accommodation of Special Needs

In accordance with University policy, I make every effort to accommodate unique and special needs of students with respect to speech, hearing, vision, seating, or other disabilities. Please notify [Disability Support Services](#) as soon as possible of requested accommodations.

File: MSDN Academic Alliance Software Center

MSDN Academic Alliance Software Center

MET College is a member of the MSDN Academic Alliance, which allows faculty, graduate and undergraduate students currently enrolled in MET courses to obtain certain Microsoft products free of charge.

You can obtain many types of Microsoft software free of charge from the Microsoft Developer Network Academic Alliance (MSDNAA) Program. By the first day of class your instructor will submit your BU email address to Microsoft to enroll you in the program for the current semester. You will receive an email from the MSDNAA E-Academy License Management System (ELMS) from the address: elms_support@e-academy.com.

Some spam filters may direct this email to a junk email folder, so you may want to check your junk email folder or add the address above to your contacts or other white list. The email will provide you with a username and password, and direct you to the MSDNAA site.

FAQ and basic information are at: <http://www.bu.edu/metit/hw-and-sw/msdn-academic-alliance-software-center/>

If you do not receive your email by the end of the first week, first check your junk email folder and then please follow the instructions at <http://www.bu.edu/metit/hw-and-sw/msdn-academic-alliance-software-center>

File: Course Grading Information

Course Grading Information

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 of the first six modules includes graded homework assignments, graded discussions, a review quiz and a graded quiz. There is a term project which helps you integrate everything that you learn in the course, and apply that learning to the development of a significant database system. During each week of the course you will implement the aspects of the term project that are based on the database technology that you are studying that week.

Grade Weighting

The following table summarizes the five kinds of graded items and the default percentage of grades determined by each of these kinds of graded items. Each of these graded items is explained below.

Deliverable Weight

Assignments 15%

Discussions 10%

Quizzes 25%

Term Project 20%

Final Exam 30%

Assignments

In each of the first five weekly modules you will have homework assignments. Feel free to do additional exercises of your own design and submit them to your facilitator for feedback. If you wish you can ask your facilitator or professor for additional exercises tailored to your background and educational needs.

If for any reason you are unable to meet any assignment deadline, contact your facilitator in advance. Scores for assignments submitted late without serious, extenuating circumstances will be penalized five percent per day for a maximum of four days, after which the assignment will not be accepted. Because we all have times when we are more busy than others, you may submit one assignment up to four days late without any penalty.

If you are stuck, and just can't complete part of an assignment, send what you have completed to your facilitator via Vista email, asking for help. Your facilitator can then provide you with guidance in the areas where you are stuck, and return the partial assignment to you for further work.

Occasionally your facilitator may opt to give you a chance to resubmit an assignment, particularly if you are struggling. The second submission will be graded fairly, and the facilitator may choose to deduct from your score any portion of the solution provided by the facilitator.

Participation: Discussions

Ten percent of your grade is based on your class contributions. This grade is derived from your participation in the moderated discussions in each module. This is an important part of the learning process. Your discussion grade is based on how well your discussion postings contribute to your classmates' learning experience and understanding of the material. Thus a good leading learning question posting can be worth more than a good answer. Students who do exceptionally well in helping their classmates will occasionally receive bonus class contribution points.

Quizzes

There is a review quiz in each of the first six modules. These review quizzes are primarily to help you prepare you for the module quizzes. When you finish a review quiz you will see the questions, your answer, the correct answers and tutorial material for each question, as well as grading rubrics for paragraph questions and references in the text. The review quizzes do not count in your grade. You can take the review quizzes at any time, as many times as you want.

There is one graded quiz in each of the first six modules. The results for your quiz will be released as soon as possible after the quiz closes. When the quizzes are released you will be able to see the questions, your answers, the correct answers, and tutorial material, just as in the review quizzes. Your professor releases the quiz results. Quizzes may be taken after the results have been released, with

permission, but the scores on late quizzes do not count on your grade.

If you are unable to take a quiz by the deadline, there is a penalty of five percent per day for a maximum of two days. A quiz cannot be extended longer than two days, because quizzes need to be released to students in a timely manner, and quizzes cannot be released until all students have taken the quiz.

The Final Exam

The final exam consists of a combination of fifty multiple choice, choose multiple, and true/false questions. You will have three hours to complete the final exam; there should be plenty of time. The final exam is configured so that if you run out of time you will be notified, but you will still be permitted to continue taking the final. This feature is intended to permit you to complete the final in spite of technical difficulties. Vista records the time for your submission of each question, so we can grade you fairly even though there are technical or other difficulties. The questions on the final exam will be very similar to those on your graded quizzes, except that the final exam has fifty questions, compared to the twenty on the quizzes. Your final exam will be proctored, either at a testing center, using remote proctoring, at BU or with a special proctoring arrangement. Your final exam will be offered in the last week of the course. The final exam will be released in the same way that the quizzes are released. You will be able to see the questions, your answers, the correct answers, and tutorial material for each question.

The Term Project

In your term project you will design and implement a database schema and SQL requests that populate and perform operations on the database. You will find detailed instructions for the term project in a module on the course home page. You will also find term project discussion questions and a guide to help you prepare for and stay on track with the project. (Preview the [Weekly Term Project Activities](#) page.)

Grading Structure

Your assignments, discussions, quizzes, term project, 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. The process and criteria for determining course letter grades is more complex than computing the weighted average grade and looking up the letter grade in the table below.

| Letter Grade | Approximate percentage grade range | Grade Points |
|--------------|--|--------------|
| A | 95–100 | 4.0 |
| A– | 91–94 | 3.7 |
| B+ | 86–90 | 3.3 |
| B | 81–85 | 3.0 |
| B– | 76–80 | 2.7 |
| C+ | 71–75 | 2.3 |
| C | 66–70 | 2.0 |
| C– | 61–66 | 1.7 |
| D | 56–60 | 1.0 |
| F | 0–55 | 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](#).

The percentage ranges above are approximate. Your letter grade is determined by your professor as the best overall measure of how well you have demonstrated that you understand the material, taking into separate consideration your performance in the quizzes, assignments, term project, discussions and final exam. Additional grading criteria include any substantial difference in your performance on the proctored final exam and the general trend of your scores over the term. The actual grade ranges will be adjusted to reflect the difficulty of graded items.

File: Important Message on Final Exams**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, and the access will be available at the exam sites.

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 place where you will take 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,

Prof. Lou Chitkushev, Ph.D.
Chairman, Computer Science Department
Boston University Metropolitan College

File: Quiz Instructions**Quiz Instructions**

Accessing the Quiz

You will have access to the quiz at the beginning of the module. However you should not access the quiz until you have completed all learning activities for the module and are prepared to meet the objectives for that module.

Quiz Details

All six quizzes have twenty questions. You can access the quiz details from the assessments menu.

The questions are either choose multiple, multiple choice (choose one), or True/False.

All questions are randomized.

The points for each question are shown.

The quiz questions will display one at a time on your screen.

You may skip over questions and revisit them in any order.

You will have 90 minutes to complete the quiz. You should have enough time so that you aren't rushed.

You can take each graded quiz only once.

You may not pause the quiz and return to it later.

You will be able to continue to save answers to questions after the time has expired, but any late answers will be time stamped and marked as late. This will allow us to grade your quiz fairly in the event that technical difficulties occur while you take your quiz.

Saving Your Answers in Vista

To answer a question, select your response from the options below the question.

When you have completed your response, click **Save** at the bottom of the page.

You can go back and edit previous responses that you saved.

If you have typed something and then try to go to the next question without saving, Vista will prompt you to save the question.

You will see question number buttons on the right-hand side of your screen; use these to move easily from question to question at any time.

When you have completed all answers, click the **Finish** button.

You will be asked to confirm that you are ready to submit the completed quiz. You can then

Cancel or go ahead to submit by clicking **Okay**.

You will see a confirmation message telling you that your quiz is submitted.

The Quiz Comment Questions

There is one short answer question at the end of each quiz and the final exam. This *comment question* appears as a quiz question, but there are no points for this item. Use this as a place to provide feedback about the quiz as a whole or to comment upon a particular quiz question, the way that you might write comments in the margins of a paper quiz. Be sure to reference the question number, because question order is randomized. Your facilitator will examine your comments and determine whether a grade adjustment or other action is appropriate.

If a technical issue of any kind arises during the exam, complete the exam, answering the remaining questions, and then contact your facilitator or instructor immediately.

Other Questions

If you have any questions about the quiz please feel free to contact your facilitator.

Technical Support

Assistance to resolve technical problems is available from Vista Support, and is restricted primarily to problems associated with the functionality of the Learning Management System.

The Contact Information for Vista Support is:


Website www.bu.edu/help/vista

Phone (888) 243-4596

File: Final Exam Overview

Final Exam Overview

The Computer Science department requires that all exams be proctored. This text will be replaced with: ode_11_su2_procxams_series01

The exam is a three-hour, closed-book exam consisting of a combination of 50 choose multiple, multiple choice (choose one), and True/False questions. The exam is only accessible during the final exam period. You will access it from either the Assessments  section of the course or from the Final Exam module on the home page. Your proctor will enter the password to start the exam.

Note

A page instructing how to schedule your proctored final exam will be visible by the third week of this course.

Format

You will have three hours to complete the final exam. There is a clock in the upper right corner of the screen keeping time for the exam.

Video Remarks from Professor Schudy

Content on this page requires a newer version of Adobe Flash Player.



There are 50 questions.

This is a **closed book/closed notes exam**. You cannot bring any materials into the exam. You cannot access any web based content other than the course exam during the three hour period.

You can take the exam only once.

Each question will be delivered one at a time.

You can revisit the questions and change your answers as many times as you want before

submitting the exam.

Saving Your Answers in Vista

To answer a question, select your response from the options below the question.

When you have completed your response, click **Save** at the bottom of the page.

You can go back and edit previous responses that you saved.

If you have typed something and then try to go to the next question without saving, Vista will prompt you to save the question.

You will see question number buttons on the right-hand side of your screen; use these to move easily from question to question at any time.

When you have completed all answers, click the **Finish** button.

You will be asked to confirm that you are ready to submit the completed exam. You can then **Cancel** or go ahead to submit by clicking **Okay**.

You will see a confirmation message telling you that your exam is submitted.

If a technical issue of any kind arises during the exam causing you to go over the allotted time, finish answering all the questions in the assessment and then contact your facilitator and instructor immediately. You can submit questions after the time has expired although they may not count toward your grade.

Opening the Exam

Go to the Assessments Menu or the Final Exam Module on your course home page to access the exam. Your proctor will enter the required password to start the exam.

Technical Support

Student Services will provide you with a technical support hotline number before the start of the exam. Please bring this number with you to the exam.

File: Academic Conduct Policy

Academic Conduct Policy

For the full text of the academic conduct code, please go to <http://www.bu.edu/met/for-students/met-policies-procedures-resources/academic-conduct-code/>.

A Definition of Plagiarism

"The academic counterpart of the bank embezzler and of the manufacturer who mislabels products is the plagiarist: the student or scholar who leads readers to believe that what they are reading is the original work of the writer when it is not. If it could be assumed that the distinction between plagiarism and honest use of sources is perfectly clear in everyone's mind, there would be no need for the explanation that follows; merely the warning with which this definition concludes would be enough. But it is apparent that sometimes people of goodwill draw the suspicion of guilt upon themselves (and, indeed, are guilty) simply because they are not aware of the illegitimacy of certain kinds of "borrowing" and of the procedures for correct identification of materials other than those gained through independent research and reflection."

"The spectrum is a wide one. At one end there is a word-for-word copying of another's writing without enclosing the copied passage in quotation marks and identifying it in a footnote, both of which are necessary. (This includes, of course, the copying of all or any part of another student's paper.) It hardly seems possible that anyone of college age or more could do that without clear intent to deceive. At the other end there is the almost casual slipping in of a particularly apt term which one has come across in reading and which so aptly expresses one's opinion that one is tempted to make it personal property."

"Between these poles there are degrees and degrees, but they may be roughly placed in two groups. Close to outright and blatant deceit-but more the result, perhaps, of laziness than of bad intent-is the patching together of random jottings made in the course of reading, generally without careful identification of their source, and then woven into the text, so that the result is a mosaic of other people's ideas and words, the writer's sole contribution being the cement to hold the pieces together. Indicative of more effort and, for

that reason, somewhat closer to honest, though still dishonest, is the paraphrase, and abbreviated (and often skillfully prepared) restatement of someone else's analysis or conclusion, without acknowledgment that another person's text has been the basis for the recapitulation."

The paragraphs above are from H. Martin and R. Ohmann, *The Logic and Rhetoric of Exposition, Revised Edition*. Copyright 1963, Holt, Rinehart and Winston.

Academic Conduct Code

I. Philosophy of Discipline

The objective of Boston University in enforcing academic rules is to promote a community atmosphere in which learning can best take place. Such an atmosphere can be maintained only so long as every student believes that his or her academic competence is being judged fairly and that he or she will not be put at a disadvantage because of someone else's dishonesty. Penalties should be carefully determined so as to be no more and no less than required to maintain the desired atmosphere. In defining violations of this code, the intent is to protect the integrity of the educational process.

II. Academic Misconduct

Academic misconduct is conduct by which a student misrepresents his or her academic accomplishments, or impedes other students' opportunities of being judged fairly for their academic work. Knowingly allowing others to represent your work as their own is as serious an offense as submitting another's work as your own.

III. Violations of this Code

Violations of this code comprise attempts to be dishonest or deceptive in the performance of academic work in or out of the classroom, alterations of academic records, alterations of official data on paper or electronic resumes, or unauthorized collaboration with another student or students. Violations include, but are not limited to:

- A. **Cheating on examination.** Any attempt by a student to alter his or her performance on an examination in violation of that examination's stated or commonly understood ground rules.
- B. **Plagiarism.** Representing the work of another as one's own. Plagiarism includes but is not limited to the following: copying the answers of another student on an examination, copying or restating the work or ideas of another person or persons in any oral or written work (printed or electronic) without citing the appropriate source, and collaborating with someone else in an academic endeavor without acknowledging his or her contribution. Plagiarism can consist of acts of commission-appropriating the words or ideas of another-or omission failing to acknowledge/document/credit the source or creator of words or ideas (see below for a detailed definition of plagiarism). It also includes colluding with someone else in an academic endeavor without acknowledging his or her contribution, using audio or video footage that comes from another source (including work done by another student) without permission and acknowledgement of that source.
- C. **Misrepresentation or falsification of data** presented for surveys, experiments, reports, etc., which includes but is not limited to: citing authors that do not exist; citing interviews that never took place, or field work that was not completed.
- D. **Theft of an examination.** Stealing or otherwise discovering and/or making known to others the contents of an examination that has not yet been administered.
- E. **Unauthorized communication during examinations.** Any unauthorized communication may be considered prima facie evidence of cheating.
- F. **Knowingly allowing another student to represent your work as his or her own.** This includes providing a copy of your paper or laboratory report to another student without the explicit permission of the instructor(s).
- G. **Forgery, alteration, or knowing misuse of graded examinations, quizzes, grade**

lists, or official records of documents, including but not limited to transcripts from any institution, letters of recommendation, degree certificates, examinations, quizzes, or other work after submission.

- H. **Theft or destruction of examinations or papers** after submission.
- I. **Submitting the same work in more than one course** without the consent of instructors.
- J. **Altering or destroying another student's work or records**, altering records of any kind, removing materials from libraries or offices without consent, or in any way interfering with the work of others so as to impede their academic performance.
- K. **Violation of the rules governing teamwork**. Unless the instructor of a course otherwise specifically provides instructions to the contrary, the following rules apply to teamwork: 1. No team member shall intentionally restrict or inhibit another team member's access to team meetings, team work-in-progress, or other team activities without the express authorization of the instructor. 2. All team members shall be held responsible for the content of all teamwork submitted for evaluation as if each team member had individually submitted the entire work product of their team as their own work.
- L. **Failure to sit in a specifically assigned seat during examinations**.
- M. **Conduct in a professional field assignment that violates the policies and regulations of the host school or agency**.
- N. **Conduct in violation of public law occurring outside the University that directly affects the academic and professional status of the student, after civil authorities have imposed sanctions**.
- O. **Attempting improperly to influence the award of any credit, grade, or honor**.
- P. **Intentionally making false statements to the Academic Conduct Committee or intentionally presenting false information to the Committee**.
- Q. **Failure to comply with the sanctions imposed under the authority of this code**.

File: Who's Who: Roles and Responsibilities

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 Manager of Student Services, Jen Sullivan. Jen is here to ensure you have a positive online experience. You will receive emails and announcements from Jen throughout the semester. Jen represents Boston University's university services and works for the Office of Distance Education. 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, Jen can direct your university questions and

concerns to the appropriate party. She also handles general questions regarding Vista 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 Vista email as it is running. You can also contact her by external email at jensul@bu.edu or call toll free at 1-888-524-2200.

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 Associate Chairman, Professor Anatoly Temkin. Dr. Temkin is the Associate Chairman for both on-campus and online students. Professor Temkin advises students on appropriate courses and programs. He also makes decisions on petitions for course waivers and transfer of credits for courses taken at other institutions. You can reach Professor Temkin at temkin@bu.edu or at (617) 358-2566.

Your Computer Science Department Program Coordinator, Alexa Muhs. Alexa administers the academic aspects of the program, including admissions and registration. You can ask Alexa questions about the program, registration, course offerings, graduation, or any other program-related topic. Alexa can be reached at amuhs@bu.edu or (617) 353-2565.

Your Computer Science Department Program Administrator, Camille Kardoose. Camille is responsible for administering most aspects of the Computer Science Department, and she can help you with most matters. You can reach Camille at cgkardoo@bu.edu or (617) 353-2566.

Your Online Faculty Coordinator, Professor Robert Schudy. Dr. Schudy is responsible for the MSCIS online program. Feel free to contact Dr. Schudy at rschudy@bu.edu or (617) 358-0009.

Professor Lou T. Chitkushev, Chairman, Computer Science Department, Boston University Metropolitan College. Dr. Chitkushev is responsible for the Computer Science Department as a whole, including the MSCIS program. 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 Schudy and/or Professor Temkin, and then Professor Chitkushev.

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

File: Registration Information and Important Dates

Registration Information and Important Dates

Go to www.bu.edu/online/online_course_schedule/important_dates to view the drop dates for your course.

Go to www.bu.edu/studentlink to withdraw or to drop your course.

If you are dropping down to zero credits for a semester you will need to contact your college or academic department.

Non-participation in your online course does not constitute a withdrawal from the class.

*Registration fee non-refundable

File: Netiquette

Netiquette

If you've been with us in the online graduate program for a while, you're probably pretty comfortable in this environment. But for those who are new or who may just want a refresher, here are some rules for communicating online which will help us all have a pleasant and rewarding online experience:

1. **Think of your discussion posts** as though they were going to be printed in a newspaper. Thinking of your posting this way should remind us not to write anything that might embarrass us or anyone else in the class. If you make a mistake and wish that you could take a post back

just send an email to your facilitator and the Professor, who can delete even graded posts.

2. **Feelings are helpful, but avoid negativity.** Our feelings, including our angst when we don't understand something, our elation when someone else appreciates what we have written, and our sense of satisfaction when we know that we have helped someone else, all help us learn. It's part of being human. Unfortunately another part of being human is the temptation to lash out against someone with whom we disagree. Angry words thrown at someone through the air are gone in a moment, and the apology afterwards can even help the relationship, but angry words thrown around in computer discussion threads or emails hang around forever to haunt us. Disagreement in discussions helps us gain other people's insights and perspective and is critical to learning many of the finer points, so don't hesitate to share your insights and opinions, even if they are very different than your classmates, but always be respectful, particularly in communications with others who may not agree with you.
3. **Remember the golden rule.** Imagine that you are the recipient of your post or email, and write what you would like to receive if you were in the recipient's position.
4. **Don't type in all caps.** This is impolite, like shouting in an intimate setting.
5. **Don't disrupt discussion with unrelated comments.** Wait until the discussion is over to change the topic.
6. **Use the "Water Cooler" for posts that are social or outside the discussion category.** The Water Cooler is helpful for building community, but students are not required to read Water Cooler posts. Putting your general posts in the Water Cooler helps your classmates who are pressed for time and also improves the continuity of the discussion threads.
7. **Be kind to people who may not have broadband connections.** Don't incorporate large graphics, videos or images into graded discussions unless this is necessary. Images in the "Introductions" posts help us build community, so they are encouraged, but these are not graded, so people can skip them if they need to. If you are citing something large from an outside source in a public area like a discussion forum, provide a web address or link and steer others to what you wish them to see.
8. **Think twice before posting to course-level discussions.** Different discussion topics have very different size audiences. The group discussions are visible to you, your facilitator, your professor, and student services—about fifteen people. Course level discussions are visible to the entire class, which may include one hundred or more students, ten or more facilitators, your professor, and student services. Think of addressing an audience of 100 when you are posting to the course-level discussions.

With your participation and cooperation, we're sure to have some lively, exciting discussions in this course.

File: Course Technical Support

Technical Support

Assistance with Vista-related technical problems is provided by the IT Help Center. To ensure the fastest possible response, please fill out the online form using the link below.

IT Help Center Support

Web <http://www.bu.edu/help/vista>

Phone (888) 243-4596

Boston University technical support via email and phone is available from 8 AM to Midnight Eastern Time. For other times, you may submit an email to the IT Help Center or call and leave a message. You will be assisted as soon as possible.

Examples of issues you might want to request support for include:

- Problems viewing or listening to sound or video files
- Problems accessing internal messages
- Problems viewing or posting comments
- Problems attaching or uploading files for assignments or discussions
- Problems accessing or submitting an assessment

For solutions to many common issues encountered in Vista such as uploading files, problems with audio and video, and Java, please consult the following link prior to contacting Tech Support:
<http://www.bu.edu/tech/web/course-sites/blackboard-vista/how-to>.

For assistance with Wimba Live Classroom, it is best to contact Wimba's Live Classroom Technical Support team directly:

Live Classroom Technical Support

Web <http://support.blackboardcollaborate.com>

Phone (877) 382-2293

Web Resources/Browser Plug-Ins

To view certain media elements in this course you will need to have several browser plug-in applications installed on your computer. See the Course Resources page in the syllabus of each individual course for other specific software requirements.

- Check your computer's compatibility by reviewing Blackboard Vista's [Technology Requirements](#).
- Check your browser settings for use with Blackboard Vista's [Browser Check](#).
- Download Most Recent Version of [Adobe Flash Player](#).
- Download Most Recent Version of [Adobe Acrobat Reader](#).

Print

Save to File