

Course Syllabus



CIT-170-90Z1- 55550 (3 Credit Hours)

Database Design Fundamentals

55559 90Z1

2026 Spring (16 Weeks)

Instructor: Charles W(Bill) Marshall

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Phone Number: 606-375-2076

Office Location: Not Applicable / Off Campus

Office Hours Announced weekly via email and Blackboard

Appointments - Use email to request an appointment during office hours.

Official Course Description

Provides an overview of database and database management system concepts, internal design models, normalization, network data models, development tools, and applications.

Course Prerequisite

[(CIT 105 OR OST 105 OR IMD 100) AND Quantitative Reasoning College-Readiness] OR Consent of Instructor.

Course Learning Outcomes

Upon completion of this course, the student can

1. Define a database and its uses.
2. Describe the difference between traditional files and databases.
3. Define a database management system (DBMS) and describe the services a DBMS provides to users.
4. Identify and describe the main features of hierarchical, network, and relational database models.
5. Demonstrate an understanding of the difference between logical and physical design.
6. Model a realistic business application using a technology-independent data model.
7. Design and implement a database using the relational model, with emphasis on data integrity and security.
8. Define and use the normalization process to further refine the relational table definitions.
9. Demonstrate an understanding of the database administration function.
10. Define and be able to use data definition language, data manipulation language, and instructions that apply relational algebra.
11. Demonstrate an understanding of distributed database systems.
12. Evaluate and select an appropriate DBMS for a given application.

General Education Information

CIT-170 specifically addresses the following Student Learning Outcomes from the General Education Competencies:

- *Implement the solution*

Kentucky Graduate Profile and Essential Skills:

The Council on Post Secondary Education (CPE) has identified the following learning outcomes that are considered essential to the success of students in higher education as they prepare for the workforce:

1. Communicate effectively.
2. Think critically in order to solve problems and create new ideas and solutions.
3. Apply quantitative reasoning skills to analyze and solve numerical problems.
4. Interact effectively with people from diverse backgrounds.
5. Adapt to changing circumstances while leading and supporting others.
6. Perform professionally within their chosen field of study or occupation.
7. Engage in civic life to improve society.
8. Collaborate and work in teams.
9. Apply academic knowledge, skills, and abilities to their chosen career.
10. Use information for decision making.

CIT170 specifically addresses the following Essential Skills: 1 , 2, 3

Course Outline

Review the course outline from the approved [KCTCS Course Curriculum Sheet](#), and Blackboard for up-to-date specifics of this course.

- I. Database Concepts
 - A. Traditional files versus databases
 - B. Database systems
 - C. Data models
- II. Modeling and Design Concepts
 - A. Relational database model
 - B. Entity relationship (ER) model
 - C. Advanced data models
 - D. Normalization of database tables
- III. Design and Implementation
 - A. Introduction to Structured Query Language (SQL)
 - B. Advanced SQL
 - C. Database design
- IV. Database Optimization
 - A. Transaction management and concurrency control
 - B. Database performance tuning and query optimization
 - C. Database administration and security
- V. Implementation Strategies
 - A. Distributed database management systems
 - B. Business intelligence and data warehouses
 - C. Database connectivity and web technologies

See Blackboard for topics, assignments, and due dates.

Text(s) and Supplies

**** NO PURCHASE REQUIRED *****

Free, web-based course materials (posted in Blackboard) will be used

Evaluation and Grading Policy

The scale below shows the relationship between your semester percent average and the letter grade you will receive.

Grade	Range
A =	90% >
B =	80% - 89.9%
C =	70% - 79.9%
D =	60% - 69.9%
E =	0% - 59.9%

The final grade will be weighted as follows: 5% from ePortfolio, 15% from Weekly assignments demonstrating concepts and terms, 50% from Database Design Project, 10% from Project Presentation video, and 20% from the final.

Category	Weight
ePortfolio	05%
Concepts / Terms Quizzes	15%
Database Design Project	50%
Project Presentation	10%
Final Exam	20%
TOTAL	100%

Online lecture/demonstration with hands-on computer work using an Entity Relationship Diagram (ERD) modeling tool such as SqlDBM.com (or equivalent product) and a relational database management system (RDBMS) such as Microsoft Access (or Microsoft SQL Server Express, MySQL, etc.). This class focuses heavily on project-based learning, and therefore, all students are required to complete an individual class project.

Attendance Policy

Class attendance/participation is required and contributes to your success as well as your course grade. Students are responsible for completing ALL assigned tasks. Students are required to log into the Blackboard on a weekly basis and to participate in online activities/assignments.

Students who do not attend and/or participate in class activities during the first week of class will be reported to the Financial Aid and Academic Affairs offices as a “noshow” which may result in decreased financial aid eligibility.

At the end of the academic semester, the instructor is required to report the “last date of attendance” for students who fail the course. Attendance is measured in terms of active attendance/participation within the class assignments (face-to-face and/or online).

Again, this information is reported to the Financial Aid and Academic Affairs offices.

Late Work Policy

Work will be accepted until the last day of class. However, a 5% late submission penalty will be deducted. Work may be submitted up to 3 times. The maximum score on a resubmission is 90%. No assignment or class project submissions will be accepted after the last day of classes.

Withdrawal Information

KCTCS Withdrawal Policy

KCTCS Policy states a W: represents a withdrawal from class without completing course requirements. A student may officially withdraw from any class up to and including the date of mid-term with a W grade.

The Midterm Date or the last day for students, at their discretion, to officially withdraw from this course and receive a grade of W is: March 10, 2026.

After the date of the midterm and through the last class of the semester or session, any student may officially request to withdraw from a course and receive a W, which may be given at the discretion of the instructor. Each instructor shall state on the first or second class meeting the factors to be used in determining if a student will be allowed to withdraw during the discretionary period. An instructor shall not assign a student a W for a class unless the student has officially withdrawn from that class in a manner prescribed by the college. A grade of W may be assigned by the College Appeals Board in cases involving a violation of student academic rights or for academic offenses.

Instructor's Withdrawal Policy (After Midterm):

After midterm, permission to withdraw will only be granted if a student has been regularly attending and participating in class or has an extenuating circumstance. The last day for students, with instructor's permission, to officially withdraw from this course and receive a grade of W is May 1, 2026

Directions for submitting a withdrawal request:

Students must submit a course withdrawal through their Student Self-Service.

Log into your Student Self-Service through [MYPATH](#).

Click on the Manage Classes Tile.

Click on Drop Courses and follow the instructions.

You will receive an email when the process is complete.

College Statement Regarding Flexible Instructional Delivery:

The College must remain flexible to meet challenges that may include epidemics, pandemics, natural disasters, human-influenced disasters, and any and all threats to the College campus, students, employees, and surrounding communities. To ensure the safety and well-being of our constituencies, the College maintains the right to move classes temporarily or permanently to online, remote platforms; to a hybrid section that includes some face-to-face learning and some remote learning; or to a different

campus, location, building, or time. Additionally, the College reserves the right to institute plans or practices in the physical classroom/lab/activity spaces and common areas to protect students and faculty. The College will attempt to make these changes as minimally disruptive as possible, but the College reserves the sole right to alter the particular type, place, or time for their classes.

Accessibility Services

MCTC strives to make learning experiences accessible to all participants and is committed to providing reasonable accommodations for all persons with disabilities. If you are seeking accommodations for this course under the Americans with Disabilities Act (ADA), you are required to contact [MCTC Accessibility Services](#) and complete the online [Accommodation Request Form](#). Please do not request accommodations directly from your Instructor without a letter of accommodation from the Accessibility/Disability Services Office. If you are a student from a KCTCS college other than MCTC, contact your Home College for establishing disability accommodations. You can find your Home College's Accessibility/Disability Services Office contact information on the [KCTCS Disability Services website](#). Your Home College will communicate with your Instructors and Accessibility/Disability Services Office to provide you with reasonable and appropriate accommodations.

Your accommodations will begin after the Instructor has received confirmation of your accommodations from the Accessibility/Disability Services Office. Accommodations cannot be applied to your course retroactively.

For more information, please email [MCTC Accessibility Services](#) or contact a member of our [Student Success Team](#).

KCTCS Student Code of Conduct

Kentucky Community and Technical College System (KCTCS) faculty and students are bound by principles of truth and honesty that are recognized as fundamental for a community of teachers and scholars. The college expects students and faculty to honor, and faculty to enforce, these academic principles. The college affirms that it will not tolerate academic dishonesty including, but not limited to, violation of academic rights of students and student offenses. Students may refer to the KCTCS Code of Student Conduct: [KCTCS Student Code of Conduct](#)

Information on student rights, academic offenses, and student's right to appeal is also available on the MCTC "Current Student" web page: [MCTC Student Policies and Procedures](#) Paper copies are available in the Student Development Office.

Division Chair Contact Information

The first step in any class dispute is to talk with the Instructor. If disputes cannot be resolved in this way or if you are having communication difficulties, you can contact the Division Chair for further guidance.

NAME: **Sharon E. Staviski**

DIVISION: **Business & Related Technologies**

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Cheating

Using an electronic device or other materials without permission during an exam will be considered cheating regardless of intent. Other forms of cheating will include, but are not limited to: having information available in any non-approved form, such as papers, books, notes, materials hidden in apparel, written on self or desks, tabbing out to another computer screen, looking at other students' work, communicating with other students in any manner

Plagiarism

Collegiate work requires a strict standard of academic responsibility. While engaged in academic coursework, we encounter other people's ideas. How we incorporate these ideas into our own work requires caution. When these ideas are not properly credited, this is referred to as plagiarism. Plagiarism involves the intentional and/or unintentional use of others' words and thoughts without acknowledgement.

Examples of plagiarism:

- Turning in someone else's work as your own
- Copying words or ideas from someone else without giving credit
- Failing to put a quotation in quotation marks
- Giving incorrect information about the source of a quotation
- Changing words or phrases (paraphrasing) while keeping the structure of a source without giving credit
- Copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not
- Using information or graphics from an internet site without citing your source
- Giving your rough draft to another person to revise or rewrite
- A form of plagiarism that is not always found in typical definitions is self-plagiarism. Self-plagiarism involves duplication of original essays in part or whole. Resubmitting written work that has previously been presented in another course is considered self-plagiarism. Self-plagiarism is as serious as other forms of plagiarism and will carry the same consequences.

If you are unsure whether or not a specific situation constitutes plagiarism, ask your instructor.

At MCTC plagiarism is a serious academic offense which can result in a student failing an assignment, failing a course, or being dismissed from the college. Be aware of your instructor's rules and regulations concerning plagiarism, this can be found in your course syllabus.

Students are expected to exhibit honesty in all work. Students caught plagiarizing or cheating will be subjected to the disciplinary policy as stated in the KCTCS Student Code of Conduct.

Review these links for tips on avoiding plagiarism:

- MCTC Library Citation Guides: [Plagiarism](#)

Student Account and Services Information

User Account Center Setup

You can access and manage your information online 24/7 through your User Account Center. You can activate your account, find your ID, and even reset your password. Login through: [KCTCS User Account Center](#)

Student Service Center

The Student Service Center is available all day, every day, online and on the phone. Our specialist team is standing by to answer whatever questions you might have on Financials, Passwords, Blackboard, Learn on Demand... and more.

Call the Go KCTCS! Student Service Center anytime, 1-855-GO-9MCTC or login through: [KCTCS Student Service Center](#)

Student Self Service Help

Log into MyPath and click on the Student Self-Service tile to take full advantage of all the Self-Service tools including: searching for classes; making payments; viewing your schedule, and more!

Emergency, Safety and Wellness Information

In case of emergency call 911 or dial 9-911 from any campus phone.

Emergency Procedures are posted in each of the on-campus classrooms for students to review. Off-campus classes will follow the procedures of the facility in which they meet. Students, please inform your emergency contacts who your instructor is, what class you are taking, and in what room the class is taught. This will expedite locating you if there is an emergency.

Other important safety information such as lockdown procedures and safety plan can be found online at our website under Student Life or at: [Campus Safety & Security](#)

SNAP Alerts

Notification of a campus lockdown can be communicated via the (SNAP) Alert System. Snap stands for Safety Notification Alert System.

Site to register for SNAP: [KCTCS SNAP](#)

1. There will be a P.A. announcement, if available.
2. All IP phones will announce and display the message.
3. All computers on MCTC network will display the message.
4. Anyone off campus that is signed up for SNAP should receive a text message and phone call and remain off campus.

Family Scholar House

As a student, your KCTCS college has partnered with Family Scholar House (FSH) to provide resources you can utilize on your path to success. The Family Scholar House Response Center is available to you Monday-Saturday 8 a.m. through 8 p.m. ET. Below are opportunities available to you at no cost when you call the Response Center with Family Scholar House: Apprenticeship & Academic Coaching, Advocacy Support, Health & Wellness Coaching, Career Coaching, and connection to community resources. Call us at 502.289.6384 or please email us at:

Info@FamilyScholarHouse.org. For more information, please visit the [Family Scholar House website](#) to see how we can support you.

TalkCampus

As a student, you can download the TalkCampus App from Google Play or the App Store and create an account using your KCTCS student email address for free.

TalkCampus provides MCTC students with 24/7 mental health support. TalkCampus is anonymous and based around peer support; you can use it if you need some help yourself or you can go on there and listen and support others. The platform is moderated and is designed as a safe place where you can just be yourself and talk about how you're really feeling.

kynect Benefits

Need financial assistance for groceries, childcare, or health care? Discover if you and your family qualify for kynect benefits! MCTC offers benefits navigators (kynectors) on our campuses to help you apply for Medicaid/KCHIP, the Kentucky Integrated Health Insurance Premium Payment (KI-HIPP) program, Qualified Health Plans (QHP), the Supplemental Nutrition Assistance Program (SNAP), and the Child Care Assistance Program (CCAP). Our kynectors can assist with SNAP/CCAP applications and Medicaid renewals, answer questions about eligibility, and provide guidance on these benefits. For more information, please visit the [kynector webpage](#).

Career Services

MCTC Student and Alumni Career Services supports students in their journey from education to employment. MCTC offers a comprehensive suite of resources designed to assist with career exploration, resume and cover letter writing, interview preparation, and work-based learning opportunities. Students can schedule one-on-one appointments, attend workshops and career fairs, and access job and internship

postings. By leveraging these resources, students can effectively navigate the transition from MCTC to their chosen career paths, ensuring they are well-prepared to enter the workforce with confidence and competence. For more information, please visit the [MCTC Student and Alumni Career Services webpage](#).

Transfer Opportunities

All students are encouraged to consider transferring to pursue further credentials. Earning additional credentials can enhance your employability and increase your earning potential. Many universities offer family housing or have nearby single-parent scholar housing, making it feasible for students with families to continue their education. Additionally, numerous universities provide scholarships specifically for transfer students who excel at community college. There are also many online degree options available. If you are interested in exploring transfer opportunities, please feel free to contact the [Transfer Center](#) to help navigate this important step in your academic journey.