Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: MAT
Course and Section #: 1030-151
Course Title: Quantitative Reasoning QL
Credits: 3

Course Description

Teaches how to communicate, interpret, and analyze quantitative information found in the media and in everyday life to make sound personal, professional, and civic decisions.

Course Attributes

This course has the following attributes:
☒ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☐ Writing Enriched Graduation Requirements
☐ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☐ Open Elective
Other: *Click here to enter text.*

Instructor Information

Instructor Name: Tisha McCune

Student Learning Outcomes

Upon successful completion of this course, students will be able to:
1. Explain real world information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words), including making reasonable predictions of trend data.
2. Convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words) that are appropriate and accurate.
3. Perform calculations that are sufficiently comprehensive and elegant (clear, concise, etc.) to solve authentic problems.
4. Analyze real world data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions.

5. Make and evaluate important assumptions in estimation, modeling, and data analysis using a compelling rationale for why each assumption is appropriate.
6. Express quantitative evidence in support of an argument or specific purpose (in terms of what evidence is used and how it is formatted, presented, and contextualized).
7. Use algebra to support objectives 1-6.

Course Materials and Texts

REQUIRED SOFTWARE LICENSE: In this class, it is required to have a software license for Hawkes Learning Systems. You can purchase access to just the online homework system by clicking Modules, then Hawkes Learning Single Sign On inside of Canvas.
A few points from Hawkes:

- When students purchase directly through the courseware the cost for Viewing Life Mathematically 2nd edition Software + eBook is $88.99. Students receive ***lifetime access*** with this purchase. So, if students need to retake the course or this is a multi-sequence course using the same materials, they will not need to repurchase.
- I attached the Student Quick Start GuideLinks to an external site., which walks students through the account creation process (clicking on the Hawkes Single Sign On) as well as the purchasing process. It also includes our contact information phone support:
- (M-F 8am-9pm EST) (**1-800-426-9538**) and 24/7 live chat (**http://chat.hawkeslearning.com**Links to an external site.). Please emphasize if they have any questions or would like one-on-one assistance to please reach out!
- Here is a helpful video you can feel free to share with students as well on navigating the Student Dashboard:
- **Dashboard and Beyond:** https://youtu.be/cIPQC9XupzkLinks to an external site.

TEXTBOOK (Optional): *Viewing Life Mathematically Plus Integrated Review, 2nd Edition*; Hawkes Learning
Microsoft Office Account (Required): We will be making extensive use of the Microsoft Office suite, especially Excel, and Word. Fortunately, as UVU students, you have access to this suite free of charge. Please visit UVU's Microsoft Office 365 page (Links to an external site.)Links to an external site. to get your access. I also strongly encourage using the Desktop applications over the Online version as it has a better feature set. You will need this same account to use Microsoft Teams for any group meetings your group chooses to hold.

Course Requirements

Course Assignments, Assessments, and Grading Policy
Individual Work. Students are **required** to come to class every period. When in class, stay off of electronic media unless directed to do so. Not only is this out of respect to the instructor and classmates, but by paying attention to class discussion students will be much more successful in the course. Discussions will be useful when it comes to doing the homework, group projects, the final exam, and most importantly, developing critical thinking skills.
Group Work. Periodically, you will be asked to work on projects which helps you work through several modules, making connections in the material you have been learning. You are expected to meet with your group, either in class, at the same time in Teams meetings, or via appropriate communication channels, to accomplish these assignments.

The projects are culminating assignments that tie several topics together. Each project consists of a group portion, where your group will make decisions that will impact the course of your project. These projects include major freedom in what topics, designs, and research you perform, but provide structure to your work. Once the group portion is completed, all students are expected to reflect on what they have learned and will complete an individual assignment.

Activity	**Percent**
Homework (Assignments)	25%
Mini Projects	25%
Major Projects	25%
Final Exam	25%

Required or Recommended Reading Assignments

All required readings use chapters from the course text that align with the lectures below

General Description of the Subject Matter of Each Lecture or Discussion

Chapters 1.1 – 1.3: Critical Thinking & Problem Solving

In this module, students learn about inductive and deductive reasoning. In addition, they learn how to estimate in real world context such as budgeting for a party or estimating based on graphs. Lastly, in this section, students will understand different problem-solving strategies such as drawing pictures, developing tables, guess and check, etc.

Chapters 2.1 – 2.4: Set Theory

In this module, students learn about set theory. From basic set notation to operations with sets and finishing up with applications solved using Venn Diagrams.

Chapters 3.1 – 3.2, 3.4: Logic

In this module, students learn about truth tables and the different fallacies.

Chapters 4.1 – 4.3: Rates, Ratios and Percents

In this module, students learn about rates, ratios and percentages. They are discussed and evaluated in real-world context.

Chapters 4.4, 7.4 – 7.5: Measurement

In this module, students learn to convert between different types of measurements (i.e. meters to feet). Students use the U.S. and metric conversion tables and unit analysis to convert between the various measurements.

Chapters 5.1 – 5.2, 5.7: Mathematical Modeling

In this module, students will explore linear and exponential modeling. They will know how to construct the different equations, create a table and graph as well as solve for various parts of the equation. To do this, students will not only understand the order of operations but logarithmic functions too.

Chapters 6.5, 6.1 – 6.3: Financial Mathematics

In this module, students will learn about budgeting, savings, and debt. They will look at simple interest and compound interest formulas as well as annuity and amortization formulas.

Chapters 10.1 – 10.4: Fundamentals of Probability
In this module, students will learn about probability, which includes basic probability, single event probability and multiple events probability. Lastly, students will learn about expected value.

Chapters 11.1 – 11.4: Statistics
In this module, students will understand how to collect, display and analyze data. In addition, they will learn about the normal distribution and finding z-scores.

Chapter 13.1 – 13.4: Voting Theory
In this module, students will understand voting theory. They will explore the various voting methods (i.e., Jefferson Method, Hamilton Method, etc) and discuss the flaws with the different voting methods.

Required Course Syllabus Statements

Generative AI
Chat GPT (and other tools), should only be used if necessary to help in learning, but not to replace it. If you use it, cite it. Don't copy its work and claim it as your own.

Using Remote Testing Software
☐ This course does not use remote testing software.

☒ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX
Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation
UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.
To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.