MATH106 – Quantitative Reasoning
Section 014

Fall 2020

Class Meeting Place/Time: Virtual lectures via Blackboard Collaborate Ultra, Tuesdays/Thursdays, 3:00 – 4:15 p.m.

Professor: Taylor H. Lewis
Email: tlewis18@gmu.edu
Office: ENGR 1703 (but no plans to be on campus this semester)
Office Hours: Virtual via Blackboard Collaborate Ultra, Mondays/Thursdays, 12:00 – 1:00 p.m.

Textbook: *Viewing Life Mathematically* (VLM) and *Beginning Statistics* (BST) (custom e-book compiled for this class). This is accessible via the HAWKES learning system linked through the Blackboard course site. It is recommended you use the free trial when starting the course in case your plans change.

Prerequisites: None.

Course Description: The course will introduce inductive and deductive reasoning, set notation and operations, logic, counting, probability, and statistics. This course meets the quantitative reasoning requirement, one of the Foundation requirements of the University General Education program. The goal of the Foundation requirement is to help ensure that students are equipped with the tools and techniques necessary to succeed in college and throughout their lives and careers.

Learning Objectives:
1. Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them.
2. Given a quantitative problem, students are able to formulate the problem quantitatively and use appropriate arithmetical, algebraic, and/or statistical methods to solve the problem.
3. Students are able to evaluate logical arguments using quantitative reasoning.
4. Students are able to communicate and present quantitative results effectively.

Course Delivery:
Each lesson in the HAWKES learning system consists of three modes:
1. **Learn** is an interactive presentation of the textbook material and includes instructional video clips and example problems.
2. **Practice** gives you access to unlimited practice problems, provides error-specific feedback for commonly made mistakes, hints for all incorrect answers, and includes an interactive Tutor with Step-by-Step guidance and fully worked out solutions. Note that every question type from Certify can be found in the Practice mode.
3. **Certify** is the homework portion of the lesson. After answering the set of questions without exceeding the available strikes (or lives), you will receive a perfect 100% score for your homework. You have unlimited attempts in each lesson to receive full credit before the due date, which is typically Friday at 11:59 p.m.

Quizzes (called WebTests in HAWKES) will be assigned almost weekly. These are typically due at 11:59 p.m. on the Sunday following the Friday of the associated Certify mode(s). You will have 45 minutes to complete it once you start, and are only given 1 attempt at each quiz.

Unless you work out an arrangement with me beforehand, there are no makeups for missed quizzes or tests. But, you may complete overdue homework assignments under the graduated penalty system below:
- Up to 2 days late, 10% penalty
- Up to 7 days late, 20% penalty
- Up to 21 days late, 30% penalty
- 22 or more days late, 40% penalty

You may contact HAWKES directly with any technical questions, including creating and/or locating your username and password, finding your access code and/or license number, or completing your work.

>   Phone: 800-426-9538, Monday – Friday, 8:00 a.m. – 10:00 p.m. EST.
>   Chat: www.hawkeslearning.com/chat, available 24/7.
>   Email: support@hawkeslearning.com

Grading:

Syllabus Quiz	5%	
Handwritten HW Assignments (2)	10%	(NOTE: each is worth 5% of your overall course grade)
Test 1 (9/24)	20%	
Test 2 (10/22)	20%	
Hawkes Certify (i.e., HW) & Quizzes	20%	(NOTE: average HW grade is 10%, average quiz grade is 10%)
Final Exam (12/10)	25%	

The grading scale will be as follows: A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: below 60%.
A + or – may be attached to the grade for the upper or lower 2 points in each range, respectively.

Schedule:

Week	Topics Covered
Week 1 (8/24 – 8/28)	VLM Sections 1.3 and 2.1: Estimates, Set Notation ➢ Certify due Friday, 9/4 at 11:59 p.m. ➢ Quiz due Sunday, 9/6 at 11:59 p.m. (called "Quiz 1: VLM Sections 1.3 and 2.1" in HAWKES) ➢ Syllabus quiz due Sunday, 9/6 at 11:59 p.m. ➢ NOTE: all due dates above pushed back one week to account for late entrants and time to settle in, set up HAWKES account, etc.
Week 2 (9/1 – 9/4)	VLM Sections 2.2 and 2.3: Subsets, Venn Diagrams, and Set Operations ➢ Certify due Friday, 9/4 at 11:59 p.m. ➢ Quiz due Sunday, 9/6 at 11:59 p.m.
Week 3 (9/7 – 9/11)	VLM Section 2.4: Applications and Surveys ➢ Certify due Friday, 9/11 at 11:59 p.m. ➢ Quiz due Sunday, 9/13 at 11:59 p.m.
Week 4 (9/14 – 9/18)	VLM Sections 3.1 and 3.2: Logic, Negations, and Truth Tables

Week	Topics Covered
	➢ Certify due Friday, 9/18 at 11:59 p.m. ➢ Quiz due Sunday, 9/20 at 11:59 p.m.
Week 5 (9/21 – 9/25)	VLM Section 3.3: Logical Equivalence and DeMorgan's Laws ➢ Certify due Wednesday, 9/23 at 11:59 p.m. ➢ **Test 1 to be taken virtually on HAWKES 9/24 from 3:00 – 4:15 p.m.**
Week 6 (9/28 –10/2)	VLM Sections 4.1 – 4.3: Rates, Ratios, Proportions, and Percentages ➢ Certify due Friday, 10/2 at 11:59 p.m. ➢ Quiz due Sunday, 10/4 at 11:59 p.m.
Week 7 (10/5 – 10/9)	VLM Section 4.4: Applications of Percentages and BST Section 7.1: Introduction to Probability ➢ Certify due Friday, 10/9 at 11:59 p.m. ➢ Quiz due Sunday, 10/11 at 11:59 p.m.
Week 8 (10/12 – 10/16)	BST Sections 7.2 and 7.3: Addition and Multiplication Rules of Probability ➢ Certify due Friday, 10/16 at 11:59 p.m. ➢ Quiz due Sunday, 10/18 at 11:59 p.m. ➢ Handwritten Assignment #1 made available 10/13, due Tuesday 10/20 at 11:59 p.m.
Week 9 (10/19 – 10/23)	BST Sections 7.4 and 7.5 (extra credit): Combinations and Permutations ➢ Certify for Section 7.4 due Wednesday, 10/21 at 11:59 p.m. ➢ Certify for Section 7.5 due Sunday, 10/25 at 11:59 p.m. ➢ **Test 2 to be taken virtually on HAWKES 10/22 from 3:00 – 4:15 p.m.**
Week 10 (10/26 – 10/30)	BST Sections 1.1 and 8.8: Data Graphs and Measures of Center ➢ Certify due Friday, 10/30 at 11:59 p.m. ➢ Quiz due Sunday, 11/1 at 11:59 p.m.
Week 11 (11/2 – 11/6)	BST Section 8.2: Measures of Dispersion ➢ **No class held on Tuesday, 11/3 (Election Day)** ➢ Certify due Friday, 11/6 at 11:59 p.m. ➢ Quiz due Sunday, 11/8 at 11:59 p.m.
Week 12 (11/9 – 11/13)	BST Section 8.3: Measures of Relative Position ➢ Certify due Friday, 11/13 at 11:59 p.m. ➢ Quiz due Sunday, 11/15 at 11:59 p.m.

Week	Topics Covered
Week 13 (11/16 – 11/20)	BST Sections 8.4 and 8.5: Working with the Normal Distribution ➢ Certify due Friday, 11/20 at 11:59 p.m. ➢ Quiz due Sunday, 11/22 at 11:59 p.m. ➢ Handwritten Assignment #2 made available 11/17, due Tuesday 11/24 at 11:59 p.m.
Week 14 (11/23 – 11/27)	Final Exam Review ➢ No class Thursday, 11/26
Week 15 (11/30 – 12/4)	More Final Exam Review **Final exam to be taken virtually on HAWKES 12/10 from 1:30 – 4:15 p.m.**

Disability Statement: If you are a student with a disability and you need academic accommodations, please let me know and contact the Office of Disability Resources at https://ds.gmu.edu/ or 703-993-2474. All academic accommodations must be arranged through that office.

Equity and Inclusion: The Department of Mathematical Sciences welcomes and values individuals and their differences including race, economic status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and disability. Please email me if you have any concerns about any feelings of inequity in this course.

GMU Math Tutoring Center: The Math Tutoring Center will be offering online tutoring services to students currently enrolled in undergraduate Math courses at GMU. More information can be found at: https://science.gmu.edu/academics/departments-units/mathematical-sciences/math-tutoring/tutoring-center-hours-and.

Additional Resources/Student Services:
- Keep Learning, Learning Services: https://learningservices.gmu.edu/keeplearning/
- Counseling and Psychological Services: https://caps.gmu.edu/
- NOTE: a longer list of GMU student support services is posted on The Stearns Center website: https://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-on-campus/

University Honor Code: You are expected to follow the GMU Honor Code detailed at https://oai.gmu.edu/mason-honor-code/.