Summer Syllabus

Quantative Reasoning - QR

University of
Math 105 Louisville

Instructor: Hilmar Castro

Text: "Topics in Contemporary Mathematics" by Wiley Williams, 6rd edition, Kendall/Hunt Publishing Co.

Prerequisites: Appropriate placement score or equivalent coursework.

Material Covered: We will study Interest, Periodic Payments, Voting Theory, and Apportionment. These topics show different ways in which mathematics is applied to solve concrete problems in the modern world. The topics we discuss do not require sophisticated mathematical prerequisites by college standards. We will use algebra to solve specific real world problems. You will need to think clearly and logically about the topics and work at understanding them.

Calculators: Students are expected to have and be able to use a calculator with algebraic logic (usually indicated by parentheses keys), an exponential key (exp, ^, or x^y), and a logarithmic key (log, ln, INV exp). For example, TI 30X IIS is sufficient and inexpensive. However, any such scientific calculator will suffice. You **cannot** use cell phone calculators!

Coursework and Grading

Grading: grades for this course will be based upon total points earned from four exams, five quizzes and two projects.

Exams	400	(100 points each exam)
Quizzes	100	(best four out of five, 25 points each)
Projects	70	(35 points each project)
Attendance/participation	30	

Out of the total 600 points you will need:

580 points for A+,	540 points for A,	530 points for A-,
520 points for B+,	480 points for B,	470 points for B-,
460 points for C+,	420 points for C,	410 points for C-,
400 points for D+,	360 points for D,	350 points for D-.

Projects: two projects will be assigned according to the attached schedule.

Each project is worth 35 points (30 points for merit, 5 points for neatness).

Homework: A list of homework problems is listed on the schedule. This homework **will not** be collected. Opportunities to ask questions about the homework will be given during recitation sessions. Make an effort to do as many homework problems as possible (even more than just assigned).

Exams: There will be four 100-point exams given according to the attached schedule.

The final exam is **not given** in this class. However:

(1) If you have missed one exam you can have a make-up on that one test during the final exam day.

(2) If you have taken all exams during the semester, you may retake any one of them. The grade on the make-up will replace the original test grade.

On the last page you will find a schedule of the course with all quizzes, exams, and project due dates listed. I recommend printing the last page and keeping it with your notes.

Some changes might occur during the semester and they will be announced in class.

Cardinal Core and Learning Outcomes: This course fulfills the quantitative reasoning component of the Cardinal Core program. Competency in each of five learning outcomes will be assessed through performance on homework, quizzes, and exams.

Outcome 1: Interpret information presented in mathematical and/or statistical forms.

Assessment: Students will be required to extract meaningful financial information from amortization tables.

Outcome 2: Illustrate and communicate mathematical and/or statistical information symbolically, visually, and/or numerically.

Assessment: Students will be required to present the feasible region for a two-variable linear programming problem.

Outcome 3: Determine when computations are needed and execute the appropriate computations.

Assessment: Students will be required to apply the correct formulas to determine election winners according to several voting methods and compute apportionments according to several apportionment methods.

Outcome 4: Apply an appropriate model to the problem to be solved.

Assessment: Students will be required to apply models of compound interest to solve problems concerning financial instruments including investments, structured loans, and annuities.

Outcome 5: Make inferences, evaluate assumptions, and assess limitations in estimation, modeling, and/or statistical analyses.

Assessment: Students will be required to identify paradoxes and nonintuitive behaviors which may occur with certain apportionment and voting methods.

Title IX/Clery Act Notification

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer.

For more information, see the Sexual Misconduct Resource Guide (http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure).

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Schedule of the Course and Practice Homework

SECTIONS	PROBLEMS
1.1, 1.2 Recitation 1.2, 1.3	1.1 odds 1 – 15, 25, 27,29,31,33 1.2 # 1, 3, 5, 11,12,14,17 1.3 # 1, 5, 7, 9,11,13,15,17
1.3, 1.4 Quiz 1 (Recitation) 1.4, 1.5	1.4 # 1, 5, 13, 15, 17,21,23 1.5 # 1,7,9,11,13,15,17
1.6 Recitation 1.7	1.6 #1,3,7,9,11,15,17,19 1.7 # 1,3,5,11,13,17,19,21
1,8 Quiz 2 (Recitation) 2.1	1.8 # 1,3,9, 11,13,15,21, 23 2,1. Odds 1-17
Review Exam 1 (Recitation) 2.2	page 63 # 1-17 2.2 odds 3-19
2.3 Project 1 Due (Recitation) 2.4	2.3 # 1,3,9,11,13,15, 19,21 2.4 # 1,3,13,15,17,19,23,25
2.5, 2.6 Quiz 3 (Recitation) 2.6, 2.7	2.5 # 1,2, 5,7ab 2.6 odds 1-15 2.7 odds 1-9;
Review Exam 2 (Recitation) 4.1	page 121 # 1-11; 4.1 odds 1-17
4.1 Project 2 Due (Recitation) 4.2	4.2 odds 1-17
4.2 , 4.3 Quiz 4 (Recitation) 4.3	4.3 odds 1-15
Review Exam 3 (Recitation) 4,4	page 287 # 1-6 4.4 # 1,3,11,13,15,17,19,21
4.4, 4.5 Recitation 4.5	4.5 # 1, 3, 5, 13,15 4.5 # 17,19, 21
4,6 Quiz 5 (Recitation) 4.6, 4.7	4.6 # 1, 7, 9,11,13,15 4.7 # 1-5,7,9,15,19,21
4.7, Review Review Exam 4 (Lecture)	page 287 #7-16
Make up exams (optional)	