MATH 4453: Mathematical Interest Theory
Section 001/01G, MWF 12:30 PM, CLB 302

Instructor: David Wright, MS 527, 744-5775, FAX: 744-8275, Email: `wrightd@okstate.edu`
    Online Classroom (D2L): `oc.okstate.edu` (Main location of class resources and grades)
    External website: `http://klein.math.okstate.edu/~wrightd/4453`

Office hours: MWF 1:30–3:00PM at MS 527 and at other times by appointment. Please feel free to drop by or contact me to see if I am available at any time.

Text: *Financial Mathematics: A Guide for Actuaries and Other Business Professionals*, by Ruckman and Francis.

Prerequisites: At least MATH 2153 with a C or better. MATH 2163: Calculus 3 and MATH 3013: Linear Algebra recommended. It is important to have solid written algebra and calculation skills. Some knowledge of basic probability is required for Chapter 9 and the derivatives notes.

Course objectives: Fundamental concepts of financial mathematics including simple and compound interest, inflation, yield rates, and equations of value for annuities, stocks, bonds, and other financial instruments. Determining equivalent measures of interest, determining yield rates, estimating rates of return, amortization. Preparation for the FM Actuarial Examination administered by the Society of Actuaries.

Syllabus: See the calendar for a tentative plan of sections covered in the textbook.

EXAMINATIONS: Two in-class exams will be given in class, on Wednesday, *Feb. 10*, and Wednesday, *March 30*. A final exam is also scheduled on *Friday, May. 6, at 10:00–11:50 AM* in our classroom. There will be no scheduled makeups; you should give me at least a week's prior notice of any absolutely compelling reason why you might need to reschedule an exam.

Quizzes and Assignments: There will be 4 scheduled in-class 25-minute quizzes given on dates marked on the course calendar. These will be variations of 2 or 3 practice problems from the textbook. There will be a small number of outsides class assignments.

Calculators: Per the rules for the FM actuarial examination, only the following Texas Instrument calculator models may be used: BA-35, TI-30Xa, BA II Plus, TI-30XIIS, BA II Plus Professional Edition, TI-30XIIB, TI-30XS MultiView, TI-30XB MultiView. The memory must be cleared prior to each exam.

    However, the financial calculators (BA-35, BA II Plus, and BA II Plus Pro Edition) have extremely useful pro-programmed functions that give a large advantage in time and efficiency, particular the TVM worksheet buttons. The exams will be timed assuming you can use the TVM worksheet. We *strongly recommend* getting a $\boxed{\textbf{TI BA II Plus financial calculator}}$.

Homework: All students must complete all the practice problems at the end of every chapter we cover. All the answers are in the back of the textbook, and detailed solutions will be available on the course D2L site. You should have a dedicated notebook for your written solutions.

Only after attempting the problems should you then look at the published solutions and use those to make corrections in your work. If you want to succeed in this kind of financial work, it is extremely important to develop good self-study work habits. If you have trouble with the quizzes or exams, I will ask to see your notebook of work on the practice problems; if that work is messy and inaccurate, that will help to diagnose what you need to do to succeed.

Grading: The one-hour exams will be worth 100 points each, and the final exam will be worth 150 points. The available points on the quizzes and assignments will be at least 180, although the maximum total you may earn is 150 points. This allows you to miss one quiz due to travel or other contingency. The total coursework will be 500 points. Students who achieve at least 90%, 80%, 70%, 60%, respectively, of the total score will receive at least an A, B, C, D, respectively. Depending on the median scores and the instructor's judgment, these cutoffs may be lowered.

STANDARD OPERATING PROCEDURE: All students must complete a minimum of six hours of work each week outside attending lectures. This work is to consist of reading in detail all sections of the book covered in class and performing all assigned homework problems and enough additional problems to make sure that you understand the material. It is very important that you contribute this six hours of work every week. If you cannot solve a problem completely, give as much of a partial solution as you can. Try to write down the exact point in the solution that you cannot understand. Try to record all facts, formulas, or examples from the class or the text that are possibly relevant to the problem. It is far better to learn this process of self-analysis than to depend on the collaboration of others. On all exams and quizzes, unless otherwise stated, all steps and formulas necessary to solve the problem must be written down.

Academic Dishonesty: It is a cornerstone of academic integrity that written work submitted under your own name should be prepared entirely by yourself. Informal discussion between students is permitted. You are also encouraged to seek help on the homework from myself during office hours. However, academic misconduct includes organized collaboration between students on homework assignments that involve, say, jointly writing solutions on the blackboard and then copying down the alleged solutions on each individual's paper. Also, examination of another student's individual written work before an assignment has been collected and graded is strictly forbidden.

Attendance Policy: Attendance of lectures is mandatory in the sense that you are responsible for all announcements of changes in schedule made during class, as well as all material covered during lectures. Roll will periodically be taken, but not every class. If you're missing a lot of classes, you can expect to be contacted.

Disability: If you feel that you have a disability and need special accommodations to pursue the course, the instructor and the Office of Student Disability Services (315 Student Union) will work with you to ensure that you have a fair opportunity to complete this class. Please advise the instructor of such disability before the end of the second week of the term.