Math 4065(Theory of Interest),   Spring 2006.

Instructor: Professor Peter A. Rejto.

Lecture: **10:10am − 11:00 pm, MWF** in **VinH 6.**

e-mail:rejto@math.umn.edu

Office: Vincent Hall 430

Office hours: M,W,F: 11:15 am.–12:05 pm. or by appointment

Office Tel: 625.4598

website: www.math.umn.edu/~rejto

Prerequisites: Math 1272 or Math 1372 or Math 1572.

Textbook : The Theory of Interest, Stephen G. Kellison, 2-nd edition. Irwin/ McGraw Hill, 1991.

Suggested Reference : Math 4065, The Theory of Interest. Lecture Notes by Professor Agard. Mathematics Library, Vincent Hall. (These notes have some beautiful proofs !)

Course Description: We shall cover the first 9 chapters of the above Kellison book. Since this is a **calculus** based upper division mathematics course, we shall also emphasize calculus based proofs.

Semester Exams:

Exam 1: Friday, February 3.

Exam 2: Friday, February 24.

Exam 3: Friday, March 24.

Exam 4: Friday, Apr 14.

Grading:

Homework	15%
Project	5%
Exams $1 - 2 - 3 - 4$	36%
Final Examination	44%

Homework: Homework will be assigned in class and collected on Fridays. After we cover a section, the corresponding Homework is due the following Friday. If the section is covered on a Friday, then the corresponding Homework is due exactly one week from that Friday. If there is a test on that particular Friday then the Homework is due the next Monday. Many of these Homeworks include numerical calculations and these should be carried out up to four decimal places.

Calculators: A scientific calculator will be needed and graphing calculators are not allowed. Note that this policy follows the one of the Society Of Actuaries, inasmuch as that policy does not allow the use of graphing calculators either.

Record keeping: If there is a discrepancy between your records and ours, please let us know it immediately, but not later than two weeks. In any case we shall not adjust our records after two weeks.

UNIFORM, COMPREHENSIVE FINAL EXAMINATION,
Wednesday, May 10, 10:30am − 12:30pm. Place to be announced.

Approximate Course Outline:

Date	Week	Section
Jan 18 – Jan 20	1	1.2, 1.3, 1.4, 1.5.
Jan 23 – Jan 27	2	1.6, 1,7, 1.8, 1,9, 1.10.
Jan 30 – Feb 3	3	2.2, 2.3, 2,5, 2.6, Exam 1.
Feb 6 – Feb 10	4	2.7, 2.8, 3.2.
Feb 13 – Feb 17	5	3.3, 3.4, 3.5, 3.6.
Feb 20 – Feb 24	6	3.7, 3.8, 3.9, Exam 2.
Feb 27 – March 3	7	4.4, 4.5, 4.6, 4.7.
Mar 6 – Mar 10	8	4.8, 5.2, 5.3, 5,4,
Mar 13 – Mar 17	– –	Spring Break
Mar 20 – Mar 24	9	5.5, Review, possible catch up, Exam 3.
Mar 27 – Mar 31	10	5.6, 5.7, 6.2, 6.3.
Apr 3 – Apr 7	11	6.4, 6.6, 7.2, 7.3.
Apr 10 – Apr 14	12	7.4, 7.5, Review, possible catch up, Exam 4.
Apr 17 – Apr 21	13	8.7, 8.8, 9.4, 9.6.
Apr 24 – Apr28	14	9.8, 9.9, 9.10.
May 1 – May 5	15	Review, posssible catch up.

SUGGESTED HOMEWORKS:

Chapter 1:

Section 1.2 The accumulation and amount functions: $1 - 3,8$.
Section 1.3 The effective rate of interest: 5,6,8.
Section 1.4 Simple interest: 9,11,12.
Section 1.5 Compound interest: 13,14,15,17.
Section 1.6 Present value: 19,21.
Section 1.7 The effective rate of discount: 22,25.
Section 1.8 Nominal rate of interest and discount: 30,33.
Section 1.9 Forces of interest: $42 - 44$.
Section 1.10 Varying interest: 47,49-52.

Chapter 2:

Section 2.2 Determining time intervals: 1,2,4.
Section 2.3 Determining time periods: 6.
Section 2.5 Equation of value: $8 - 10$.
Section 2.6 Unknown time: $13 - 15, 17 - 18$.
Section 2.7 Unknown interest: $19 - 23$.
Section 2.8 Practical examples: $25,26,28 - 33$.

Chapter 3:

Section 3.2 Annuity – immediate: $1 - 3,7$.
Section 3.3 Annuity – due: $9 - 11,15$.
Section 3.4 Annuity values on any date: $17,19 - 21,23$.
Section 3.5 Perpetuities: $25 - 27$.
Section 3.6 Nonstandard terms and interest: 29.
Section 3.7 Unknown time: $32 - 34,36$.
Section 3.8 Unknown rate of interest: 38,41,42.
Section 3.9 Varying interest: $43a,b,44,45,47 - 49$.
Miscellaneous problems: $51 - 53$.