ST. JOHN’S UNIVERSITY
NEW YORK

THE PETER J. TOBIN COLLEGE OF BUSINESS

Department of Risk Management, Insurance & Actuarial Science

SYLLABUS

Course title: Theory of Interest
Course number: ACT 3334
Submitted: Fall 2014
Ping Wang
DEPARTMENT

Risk Management, Insurance & Actuarial Science

COURSE NAME

Theory of Interest

COURSE NUMBER

ACT 3334

COURSE DESCRIPTION

The course covers a traditional and modern treatment of mathematics of investment; specifically it covers theory of interest, bond pricing and evaluation, and introduction to asset-liability management, plus introduction to concepts of financial derivatives markets.

PREREQUISITE

ACT 3322, 3333

CREDIT

3 credit hours

OBJECTIVES OF THIS COURSE

Students understand the role of interest rate in pricing and evaluation of financial products, master general technical methods required of an actuary, and get ready for the preliminary exam FM of Society of Actuaries and course 2 of Casualty Actuary Society.

TOPICAL MODULES

I. Interest Rate Measurement (1-2 weeks)
   i. Rate of Interest
   ii. Effective and nominal rate of Interest
   iii. Rate of discount
   iv. Present value and accumulated value

II. Valuation of Annuities (3 weeks)
   i. Present value and accumulated value of annuity-immediate
   ii. Present value and accumulated value of annuity-due
iii. Annuities with varying payments

III. Debts Valuation (3 weeks)
   i. Loan repayment
   ii. Bond valuation

IV. Investment Returns (3 weeks)
   i. Return of investment
   ii. Term structure of interest rates

V. Asset-Liability Management (1-2 weeks)
   i. Cash Flow Duration and Immunization
   ii. Other topics

METHODS OF INSTRUCTION

Lectures, discussions and exercises.

SUGGESTED STUDENT PERFORMANCE EVALUATION

ASSESSMENT

Student performance will be assessed on homework, quizzes, midterm exams and cumulative final exam.

All examinations and quizzes are closed book and closed notes.

TEXT BOOK

<table>
<thead>
<tr>
<th>Title</th>
<th>Mathematics of Investment and Credit, 5th edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Samuel A. Broverman</td>
</tr>
<tr>
<td>Publisher</td>
<td>ACTEX Publications</td>
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<tr>
<td>Date</td>
<td>2010</td>
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