Instructor: Greg Wanner, ACAS
E-mail: gwanner@bus.wisc.edu
Phone: 608-262-5800
Office: 5252C Grainger Hall

Office hours: Wednesdays 1:30 – 3:00 PM: students will be notified any time it becomes necessary to adjust or cancel these office hours. Outside of my scheduled office hours, students may also make an appointment or stop by my office to see if I am available. Most days, I am generally on campus from 8:00 AM to 5:30 PM Tu, We, and Th, and I am often in my office when I am not in class. My class schedule is Tu 11-12:15, We 4:00 – 5:30, and Th 11-12:15 and 4:00-5:30.

Sections: Lecture Section 1 - W 4:00 – 5:30 PM, 2294 Grainger
Lecture Section 2 - Th 4:00 – 5:30 PM, 2290 Grainger

Website: https://courses.bus.wisc.edu or https://courses.moodle.wisc.edu

Texts: (Please note that the same textbooks/materials are used for all sections of Actuarial Science 301. Please also note that these are the same textbooks/materials that are required for all sections of Actuarial Science 303, regardless of the instructor. As elaborated on below, concurrent or prior enrollment in Actuarial Science 303 is recommended.)

- plus -
Financial Mathematics: Derivatives Markets (also referred to as: Exam FM Study Program Upgrade), BPP Professional Education.

The two texts listed above are sold as a bundled package. The Exam FM Study Program Upgrade was added in 2012 to cover the Exam FM material on derivatives, and cannot easily be found as an individual text. You can avoid the difficulty of trying to locate the study program upgrade individually by only purchasing the two texts together in a complete set. Bundled copies of the texts are available from the UW Bookstore and for order at wwwbpptraining.com, as well as from other sources. (These sources are identified as options for your convenience, and no endorsement is implied.)

Exam FM Question and Answer Bank (aka Q&A Bank), BPP Professional Education.

The Q&A Bank is available at the Grainger Hall Copy Center (Room 1220). The Copy Center generally has enough copies of the Q & A Bank on hand to meet student demand. If they are sold out, they can generally have additional copies available within 24-48 hours. You can buy your copy in person by stopping by the counter in 1220, or use the Copy Center's on-line order service at https://login.wisc.edu/idp/Authn/UserPassword.
Course Objectives:
The goal of this course is to assist students in passing SOA Course FM/CAS Exam 2. In order to achieve this goal, the course will result in students developing the knowledge to:

- Understand the time value of money and its impact on decisions both in their professional and personal life.
- Understand dynamics and pricing of key financial instruments including annuities, bonds and loans.
- Understand the importance of immunizing asset and liability portfolios against changes in interest rates.
- Understand different types of measures of rate of return and return on investment.
- Understand general concepts of financial derivatives as well as how to combine positions in derivatives and assets for specific strategies to include hedging and speculation.

Much of this knowledge will also be of use to you in personal financial matters, as what you learn will help you understand matters such as:

- The cost of a loan, differences in cost based on different payment terms and interest rates, and when it may be advantageous to re-finance a loan.
- Determining the yield related to the price paid for stocks, bonds, or derivatives, as a means of comparing the relative value of different investment options available to you.
- How the value of investments and savings accumulate, to facilitate accomplishing certain financial objectives such as building target amounts for down payments or retirement.

Additionally, the course will be conducted to emphasize general attributes that will aid the professional development of students, including:

- Communicating questions and information clearly and completely.
- Concern for the collective welfare of the class, the Actuarial Science program, and the Wisconsin School of Business (WSoB), by showing respect and congeniality for others, and supporting the work and efforts of others.
- Becoming aware of professional standards, ethics, demeanor, and conduct.
- Developing a sense of composure and confidence in interactions with others.

Course Philosophy:
This course will combine review of key concepts from Act Sci 303 – Theory of Interest and Life Insurance, and demonstration of illustrative problems. The course will examine theory and problems concerning financial mathematics (i.e., interest theory) and financial derivatives. It is assumed that students have taken or are currently taking Act Sci 303, as the material in 301 will correspond to that course.

Learning in Act Sci 301 will result from lectures, participatory demonstration of problems, assignments, and quizzes. Lectures will be devoted primarily to examples which reinforce those concepts covered in Act Sci 303 that students may be finding more challenging. Homework assignments and quizzes will permit students to develop and demonstrate their understanding of the concepts, as those concepts relate to solving problems. Problems will consist of both past actuarial exam questions and related questions, primarily from the BPP curriculum.

The course is guided toward the professional actuarial exams; however, the actuarial exams will not determine the entire content or pace of the class. The course syllabus and related addenda provide a general plan for the class; however, deviations may be necessary, and will be announced by the instructor when they are.

Exam Dates: None. No exams will be administered in this course. This includes that there is no final exam.
Course Grading:  Grades for Act Sci 301 will be based on awarding students typically up to 20 points per each week of class, divided between attendance, homework, and quizzes as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Weekly % of Total</th>
<th>Points per Week</th>
<th>Points per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>60%</td>
<td>12</td>
<td>180</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Homework*</td>
<td>25%</td>
<td>5</td>
<td>65</td>
</tr>
<tr>
<td><strong>Total points available / used for grading</strong></td>
<td></td>
<td><strong>290</strong></td>
<td></td>
</tr>
</tbody>
</table>

* No homework will be assigned the first week and last week of class. Homework is collected the following week after it is assigned.

Grading Scale:  Grades are based on earned points as a proportion of the total points available in the course, using the grade ranges tabulated below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
<th>Point Range – Necessary Earned Points to Receive Corresponding Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
<td>261 – 290 points</td>
</tr>
<tr>
<td>AB</td>
<td>80% - 89.9%</td>
<td>232 – 260 points</td>
</tr>
<tr>
<td>B</td>
<td>70% - 79.9%</td>
<td>203 – 231 points</td>
</tr>
<tr>
<td>BC</td>
<td>60% - 69.9%</td>
<td>174 – 202 points</td>
</tr>
<tr>
<td>C</td>
<td>59.9% and below</td>
<td>173 points and below</td>
</tr>
</tbody>
</table>

Note: Grades are intended to represent the level of performance in the class and the mastery of the material. For this class, the above scale has worked well in this regard. However, in the unlikely event it is deemed an inaccurate representation of student achievement, the scale will be adjusted as necessary. Overall though, if you hope to get an A in this class, you should expect to have to earn 90% of the available points.

Course requirements:

- While not a requirement, previous or concurrent registration in Act Sci 303 is strongly beneficial.
- We will be going through the material at a fast pace. Accordingly, you are expected to be current with the corresponding material being covered in Act Sci 303, or otherwise be familiar with it.
- Attendance is required, and will be monitored through the taking of quizzes and/or an attendance sign-in sheet if necessary.
- As homework accounts for approximately 25% of your grade, completion of weekly homework is essentially required if you wish to get a B or above.
- Classes are more effective and interesting when students pay attention and ask questions about the material being covered or related topics.
- Just as for Act Sci 303, everyone is to have one of the SOA approved financial calculators for use in quizzes, homework, and doing practice problems in preparing for the Course FM exam. Society of Actuaries approved FINANCIAL models are Texas Instruments BAII Plus, and BAII Plus Professional. Please note that other calculators are permitted for use on SOA exams: Texas Instruments calculators BA–35 (battery or solar), TI–30Xa, TI–30XIIB (IIB battery or IIS solar), or TI-30X MultiView (XB Battery or XS Solar). However, the last 4 do not have the financial functions needed for this course or for the Course FM exam. The approved financial models can be found at the UW Bookstore and at numerous general retailers, as well as on-line at Amazon, the TI store (epsstore.ti.com), Best Buy, OfficeMax/OfficeDepot, Staples, and Walmart, among others. (This information is provided only to serve as suggestions on possible options; no endorsement of these retailers is implied.)
Attendance:
Attendance is required and will be taken every class period. All students should expect to fully attend each class session – showing up just for the quizzes will be penalized. If you must miss a partial or entire class session, you must give me a university-approved reason for the absence before that class (in person or via e-mail).

Homework:
Homework is planned to consist of individual written assignments. The course schedule calls for homework to be assigned on a regular basis over duration of the semester, except no assignment is made the first week of class or the last week of class. Homework is due the Friday of the week subsequent to when it is assigned. Exceptions for assignments and due dates may be made at the beginning of the semester, school recesses, and the end of the semester.

Weekly written assignments are due to be uploaded to the course website no later than 11:55 PM on Fridays. ONLY UPLOADS OF PDF DOCUMENTS WILL BE ACCEPTED. (This will be STRICTLY enforced. The course website provides instructions on how to create pdf files using the scanner available in the WSoB Library, or from document-scanning apps. You must use one of these, or print your work directly to a pdf file. Using your cell phone’s camera to take a picture of your work should NOT be done, and will NOT be accepted.)

The problems that comprise each week’s homework assignment will be available on the course web-site. Assigned problems/exercises will be identified at the beginning of the week prior to their respective due dates (generally 10-11 days before the due date). For example, the first assignment in this course will be made at the beginning of the second week (Monday, January 25), and be due by 11:55 PM on the Friday of the third week (Friday, February 5).

Quizzes:
Quizzes will generally be given at the end of each class period. Weekly quizzes will generally consist of one problem. Quiz problems will be based on problems worked for homework or examples illustrated by the instructor from the current or previous recent classes. There will be no make-up quizzes, unless you have provided me with a university-approved reason for the missing the quiz, in person or via e-mail, before the class in which the quiz is given.

Material to be Covered in this Course:
This course provides an opportunity to reinforce the subject matter in Act Sci 303. As such, the material covered each week will largely coincidence with what has been covered recently in Act Sci 303, with some adjustments to match the subject matter of current homework assignments. Please refer to the course web-site for a listing of the material expected to be covered each week in this class.

Personal Electronic Technology:
As per the Wisconsin School of Business policy, the use of personal electronic technology (e.g. cell phone, iphone, ipod, blackberry, laptop computers, mp3 player, etc.) is not allowed during lectures or quizzes. We believe that classroom use of such technology can serve as a distraction for the user, classmates, and the instructor, and can hinder instruction and learning. Please disable your device prior to lectures so it does not become a distraction. Any student who uses such technology during lecture will simply be asked to leave. Any student who uses such technology during a quiz is in violation of the code of academic honesty of the University of Wisconsin – Madison.
Academic Integrity:
You are responsible for maintaining the highest standards of honesty and integrity in every phase of your academic career. The penalties for academic dishonesty are severe and ignorance is not an acceptable defense. You are responsible for informing yourself about the standards before performing any academic work, which are provided on the web-site of the Office of the Dean of Students at:
https://www.students.wisc.edu/doso/academic-integrity/

It is my responsibility to uphold the University’s academic honesty policy and report my suspicions of dishonesty to the Office of the Dean of Students.

Web Resources:
A course web page has been established as a means for me to efficiently administer this class. The web page allows you to obtain a copy of the syllabus, obtain course-related materials, upload and monitor your homework and scores, view your quiz scores, link to other important web pages, etc. You are responsible for accessing the course web page on a regular basis, as information will be incrementally added to it as the course progresses during the semester. You may log on to the web page through the following web addresses:
https://courses.bus.wisc.edu or https://courses.moodle.wisc.edu

Also, official sample problems and solutions (some with video), provided by the SOA and CAS is available through our own Technology Enhanced Learning in Actuarial Science website devoted to Course FM Problems: http://instruction.bus.wisc.edu/jfrees/UWCAELearn/Lists/Course%20FM%20Problems/AllItems.aspx

Additionally, a series of learning modules have been established to align with each chapter in the Financial Mathematics: A Practical Guide... and Financial Mathematics: Derivative Markets texts. The modules consist of sections which present the key symbols, formulas, and concepts used in each chapter, followed by true/false and multiple choice questions to test your knowledge of that material. The modules historically have been located at: http://instruction2.bus.wisc.edu/course/view.php?id=5. Recently, the content seems to have been moved from this location. I will investigate the new location if there is enough interest from students to use this resource.

E-mail:
Announcements regarding the class may be sent from me to you via e-mail. Any announcement I send via e-mail (as opposed to a response to any individual e-mail I receive) is assumed to be communicated to the entire class. Thus, it is imperative you check your e-mail regularly.

I will answer simple, factual questions via e-mail; however, more thoughtful questions need to be asked during class, office hours, or review sessions. E-mail is useful for simple communication but is limited in the ability to develop firm understanding of material. Should you need to e-mail me, please type AS 301 in the subject line. Otherwise, your email may be filtered into junk mail. I will respond to individual e-mails in a reasonable amount of time. The response may be to ask you to call me or to come see me during office hours.

Actuarial Science, Risk Management and Insurance (ASRMI) Homepage:
The address for the ASRMI homepage is http://bus.wisc.edu/knowledge-expertise/academic-departments/actuarial-science-risk-management-insurance. For those interested in the major, you should familiarize yourself with this site. Important dates, events, and announcements related to the ASRMI program appear here, as well as information regarding career opportunities, scholarships, the actuarial career fair, and other items of interest.

Actuarial Club Homepage:
The Actuarial Club is a student-run organization for those interested in finding out more about or already studying actuarial science. Members range in age from freshmen to graduate/Capstone students. The Club
encourages interaction among students, faculty, and industry professionals in the actuarial field through networking events, company presentations, and other activities. These activities are beneficial in helping students locate internships, full-time employment after graduation, and gaining insights on the type of work actuaries do on a daily basis. The Actuarial Club also provides valuable support and resources for students taking actuarial exams. You can find out more about the club and how to become a member at: https://win.wisc.edu/organization/actclub.

**Actuarial Exam Information:**
The following websites provide useful information on actuarial exams pertinent to this class. Because these url’s frequently change, you may wish to simply use www.soa.org and www.beanactuary.org as starting points.

SOA Current General Education (Exam) Information: [http://soa.org/education/general-info/](http://soa.org/education/general-info/)

**Other:**
- If you need accommodations due to a disability please see me as soon as possible, so we may work with the Dean of Students and/or the McBurney Center to determine what accommodations are available and appropriate.
- Class will start on time – be punctual.
- Please bring calculators, textbooks, notes and homework to class to allow you to effectively participate.
- Class participation is important. Your interaction will help me understand how well the topics are being understood and will also benefit others who likely have some of the same questions.
- Lectures are intended to emphasize the more difficult concepts and provide general insights. There is not enough time in lectures to cover all material. So it is imperative that students be committed to putting in time outside class to read the text, complete homework, and do plenty of practice problems. To gain an understanding of the material, students must build on, rather than rely on, what they learn in lectures.
- Your financial calculator is a great tool, especially if you plan on taking the SOA Course FM exam. As you work problems for practice, emphasize not only recognizing problem types, but also how to solve these problems by effectively using the functions on your calculator which compute present values, future values, annuities, internal rate of return, bond prices, amortization, and so on.
- You are my customers. My livelihood is made possible by your interest in furthering your education. Therefore, your feedback is important to me. My goal is to be as effective of a teacher as I can be, and to accomplish this, I need to know what you think.
- By the same token, to be fair to all students, I cannot allow individual students to monopolize my time for this class. If you attend all lectures and actively participate, read the assigned text, do all homework, and make a reasonable effort, you will succeed in this class. I expect all students to make this effort. I will work hard at teaching this class, but you need to do your part, as well. I want all students to succeed. If I start spending excessive time with any students who are not putting in the effort needed to keep up, it is not fair to other students who are.
Key Dates for This Class:

January 20, 2016 – First day of class for Section 1
January 21, 2016 – First day of class for Section 2

February 5, 2016 – Due date for first homework assignment

February 29, 2016 - Registration deadline for April Exam Window for Exam FM#

March 23, 2016 – No class for Section 1 due to Spring Recess
March 24, 2016 – No class for Section 2 due to Spring Recess

April 7 - 18, 2016 – Exam FM Computer Based Testing (April Exam Window)

May 2, 2016 - Registration deadline for June Exam Window for Exam FM#

May 4, 2016 – Last day of class for Section 1
May 5, 2016 – Last day of class for Section 2

May 6, 2016 – Due date for last homework assignment

May 8 - 14, 2015 – UW exam period (there is NO final exam in this class)

June 9 - 20, 2016 – Exam FM Computer Based Testing (June Exam Window)

June 27, 2016 - Registration deadline for August Exam Window for Exam FM#

August 4 - 15, 2016 – Exam FM Computer Based Testing (August Exam Window)

#Registration deadlines are generally about 6 weeks before the corresponding exam windows begin. ■