

Michigan State University
Spring 2015 Semester
STT 456 Actuarial Models II
MW 1:50-2:55 PM A108 Wells Hall
F 1:50-2:55 PM A108 Wells Hall - ends February 20

Instructor

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Office hours

Wednesdays, 10am - 1pm or by appointment (kindly send email to make appointment)

Recommended Background

STT 455 (Actuarial Models I)

Graduate Assistant

Edward (Ed) Cruz, C505, Wells Hall, tel 517-884-1488
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Course website

<http://www.math.msu.edu/~valdezea/stt456s15/>

Additional details about the course including several links related to the SOA Exam MLC will be found in our course website.

Required readings

Lectures and exercises in the class will be heavily based on the materials covered from the following textbook:

Actuarial Mathematics for Life Contingent Risks, 2nd edition, by D. Dickson, M. Hardy, and H. Waters, Cambridge University Press, 2013.

Solutions manual to the 2nd edition can also be ordered here: amazon.com. In addition, the Cambridge University Press site may provide additional resources here: [Cambridge University Press](http://www.cambridge.org). Any possible errata on the book can usually be found here too.

Details of a tentative class lecture program are attached as appendix.

Additional suggested reference

The following textbook may also be helpful for those preparing for Exam MLC:

Models for Quantifying Risk, 6th edition, by S. Camilli, I. Duncan, and R. London, Actex Publications, 2014. http://www.actexamdriver.com/Models-for-Quantifying-Risk-6th-Edition-P2290.aspx#.U_uHH2ONbA6

Course assessments

The following table gives the relative weights of the assessment components for the course:

Assessment	Weights	Dates
Homework	15%	February 4
Class Test 1	25%	February 25
Class Test 2	25%	April 8
Final Examination	35%	May 4, 3:00-5:00pm
Total	100%	

Although these dates are fixed, the topics covered in each exam may vary slightly, depending on what we have covered in lecture up to that point. Before each exam, there will be up to one class of review where we will go over worked out problems.

Final examination

Final assessment week for Spring 2015 takes place from Monday, May 4 through Friday, May 8. Students are required to be available for their exam and/or complete an assessment during the time and schedule stated in the Office of the Registrar (RO). For more information on Final Examination Policy, please go to <http://reg.msu.edu/ROInfo/Calendar/FinalExam.aspx>

Class attendance

While attendance is not compulsory, it will be checked at random times throughout the semester and students with excellent record of attendance may be rewarded. If necessary, students who are doing poorly in the class with poor record of attendance will be warned.

Academic honesty

The standards of academic honesty as stated in the Student Handbook will be strictly enforced. Please feel free to collaborate with others on homework; this is the best way to learn. However, write up solutions as your own - do not copy the work of others. You should be able to understand and replicate all that you have written as homework.

Religious observance guidelines

From the Office of the Provost:

“It bears remembering that it has always been the policy of the University to permit students and faculty/academic staff to observe those holidays set aside by their chosen religious faith. Faculty and staff should be sensitive to the observance of these holidays so that students who absent themselves from class on these days are not disadvantaged. It is the responsibility of those students who wish to be absent to make arrangements in advance with their instructors. Without another simple and dignified way to determine the validity of individual claims, the claim of a religious conflict should be accepted at face value. Please consider the ways in which these planned absences can be fairly and respectfully accommodated. As an institution, we are committed to the value of inclusion, and so our practices must conform to our commitments. I am confident that working together we can continue to build an environment that supports and fosters diversity and

inclusiveness.”

Additional information on MSU’s Religious Observance policy can be found on the website of the Office of Inclusion and Intercultural Initiatives, <http://www.inclusion.msu.edu/> and the Registrar’s website at <http://www.reg.msu.edu/ROInfo/Notices/ReligiousPolicy.asp>

Suggestions to the students

If you want extra help, I will be happy to talk with you. My office location, telephone extension, and e-mail address are listed above. I will be happy to schedule a time to talk outside of class.

You should also find each other to be valuable resources. Working together is encouraged. Much work in mathematics and science rewards a collaborative approach – indeed, evidence suggests that working together enhances learning. Just be certain that when a problem has been solved, every one understands and writes up his or her own solution. Explaining to others can help your own learning. In other words, I suggest that you are joining a community, and should care about your fellow students. Do not permit friends to neglect their work and do poorly. The educational model most likely to lead to success is a caring and supportive one, not a highly competitive one.

Use your time effectively. This is a class that will serve you the rest of your career, whether it is in actuarial science, economics, or finance. The concepts learned here will most certainly apply to your personal financial life as well, whether you buy a house via a mortgage or plan your retirement via an annuity. It is also a labor-intensive class that will require your attention and time. Use of this time can be enhanced by:

Effective notetaking. Think in class; don’t just take notes. It helps to go over your notes after class to identify what is important. Leave room to add details later.

Reading ahead. Lectures are important, but certainly do not cover everything and can include only a sample of examples. You need to read the text. Try to work out suggested problems and fill in missing steps as you read. Formulate questions before coming to class.

Consistent effort. Do not put off review and study until test time! Distributing your effort is more effective than cramming just before a test.

Doing problems. Do more problems than are suggested. Write your solutions neatly so that they are useful for review later.

If this seems like a good bit of work, that’s because it is. In the words of Michael Jordan:

“If you do the work, you get rewarded. There are no shortcuts in life.”

Important dates for Spring 2015

Dates for all tests and homeworks are indicated somewhere in this syllabus.

Monday 1/12/2015	Classes Begin.
Friday 1/16/2015	Online open add period for fall semester ends at 8pm.
Monday 1/19/2015	Martin Luther King Day. University open, classes cancelled.
Monday 1/19/2015 to Friday 1/23/2015	Students go to Undergraduate office, C212 Wells Hall for Mathematics enrollment changes. (Late add's, drop to lower course, section changes)
Friday 2/6/2015	End of 100% Tuition Refund
Wednesday 3/4/2015	Middle of Semester. Last day to drop a course with no grade reported.
Monday 3/9/2015 to Friday 3/13/2015	Spring Break.
Friday 5/1/2015	Last Day of Classes.
Monday 5/4/2015 to Friday 5/8/2015	Final Exams Week. Refer to Final Exam Schedule on RO calendar for your exam time.

Resource Center for Persons with Disabilities

“MSU is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a verified individual services accommodation (“VISA”) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc). Requests received after this date will be honored whenever possible.”

Tentative class schedule ¹

Review materials covered in STT 455: Chapters 2-6.

Week Number	Week Beginning	Topics Covered	Assessment
1	Jan 12	Premiums - continued (1.5 weeks) Dickson, et al. (Chapter 6: 6.8, 6.9)	
2	Jan 19	Policy values and reserves (2.5 weeks) Dickson, et al. (Chapter 7)	
3	Jan 26	- continued	
4	Feb 2	- continued	Homework due
5	Feb 9	Multiple state models (2.5 weeks) Dickson, et al. (Chapter 8: 8.1-8.7; 8.13)	
6	Feb 16	- continued	
7	Feb 23	Multiple decrement models (1.5 weeks) Dickson, et al. (Chapter 8: 8.8-8.11)	Class Test 1 (details to be announced)
8	Mar 2	- continued	
Spring Break: Mar 9-13			
9	Mar 16	Multiple life models (1.5 weeks) Dickson, et al. (Chapter 9)	
10	Mar 23	Universal life insurance (2 weeks) Dickson, et al. (Chapter 13: 13.1-2; 13.4-13.5)	
11	Mar 30	- continued	
12	Apr 6	Emerging costs for traditional LI (1.5 weeks) Dickson, et al. (Chapter 12)	Class Test 2 (details to be announced)
13	Apr 13	- continued	
14	Apr 20	Pension mathematics (1.5 weeks) Dickson, et al. (Chapter 10: 10.1-10.6)	
15	Apr 27	Review	
Final Examination Period: May 4-8			

¹any changes will be announced in class or on website