Term Information

Effective Term	Spring 2021
Previous Value	*Summer 2012*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Add DL designation

What is the rationale for the proposed change(s)?

This is part of a larger project to provide online courses for the actuarial science program along with the MAQRM program.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None.

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Mathematics
Fiscal Unit/Academic Org	Mathematics - D0671
College/Academic Group	Arts and Sciences
Level/Career	Graduate, Undergraduate
Course Number/Catalog	5634
Course Title	Loss Models II
Transcript Abbreviation	Loss Models 2
Course Description	Continuation of 5633: introduction to the construction and evaluation of actuarial models, with topics covered by examinations of the Society of Actuaries and the Casualty Actuarial Society.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance
Previous Value	*No*
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites   C- or better in 5633. Open only to actuarial science majors, and to MMS students specializing in Financial Math.

Exclusions

Electronically Enforced   No

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code   27.0101

Subsidy Level   Doctoral Course

Intended Rank   Junior, Senior, Masters, Doctoral

Previous Value   *Junior, Senior, Masters*

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

Previous Value

- Students will understand the various applications of mathematics to loss models.

Content Topic List
- Estimation of data
- Parameter estimation
- Model selection
- Simulation
- Credibility

Sought Concurrence   No

Attachments

- Syllabus 5634-in_person.pdf: Syllabus - in person

  (Syllabus. Owner: Husen,William J)

- Syllabus 5634 Online.pdf: Syllabus - online

  (Syllabus. Owner: Husen,William J)

- Math 5634-DL-syllabus-review.docx: DL review document

  (Other Supporting Documentation. Owner: Husen,William J)

Comments

- Box unchecked. *(by Husen,William J on 08/26/2020 03:58 PM)*

- Hi Amy, Either uncheck "Greater or equal to 50% at a distance" or please submit a second set of docs for hybrid (namely a hybrid syllabus & an ASCTech review sheet for the hybrid version). Panels do not consider that approval for DL extends to hybrid. Contact me if you have any questions. *(by Vankeerbergen,Bernadette Chantal on 08/26/2020 03:55 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Husen,William J	08/26/2020 01:58 PM	Submitted for Approval
Approved	Husen,William J	08/26/2020 01:58 PM	Unit Approval
Approved	Haddad,Deborah Moore	08/26/2020 03:02 PM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	08/26/2020 03:56 PM	ASCCAO Approval
Submitted	Husen,William J	08/26/2020 03:58 PM	Submitted for Approval
Approved	Husen,William J	08/26/2020 03:59 PM	Unit Approval
Approved	Haddad,Deborah Moore	08/26/2020 04:46 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Vankeerbergen,Bernadette Chantal	08/26/2020 04:46 PM	ASCCAO Approval

Math 5634: Loss Models II

Spring Semester 2021 – The Ohio State University

Lecturer:	Dr. Bradley Waller
Office:	Mathematics Building 210
Office Hours:	Tuesdays from 4-5pm in a Zoom meeting or by appointment.
Email:	waller.44@osu.edu
Purpose:	This course sequence is designed to give students an introduction to the construction and evaluation of actuarial models. In particular, students will understand measures of risk, characteristics of actuarial models, severity models, frequency models, and aggregate loss models. Additionally, this course will help actuary candidates prepare for the Society of Actuaries' (SOA) exam STAM.
Textbook:	*Loss Models*, 5th edition, by Klugman, Panjer and Willmot, published by Wiley, ISBN: 9781119523789 (Required). *Introduction to Ratemaking and Loss Reserving for Property and Casualty Insurance*, 4th edition, by Brown and Lennox, published by Actex, ISBN: 9781625424747 (Recommended).
Assessment:	Your course grade will be based on homework, quizzes, exams, and group work; it will be computed as follows:

Computation	Grades
Homework - 25%	A ≥ 93
	$93 >$ A- ≥ 90
	$90 >$ B+ ≥ 87
Mini-Exams - 20%	$87 >$ B ≥ 83
	$83 >$ B- ≥ 80
Exams - 40%	$80 >$ C+ ≥ 77
	$77 >$ C ≥ 73
Group Work - 15%	$73 >$ C- ≥ 67
	$67 >$ D ≥ 60
	$60 >$ E

There will be no makeup exams given, or late homework accepted, without documentation of a medical emergency or university-excused absence, unless we have made arrangements in advance.

Content Delivery: Since this course is online, there will be a large burden of learning on the individual. Under each part of the modules sections of Carmen, you will find lectures and multimedia. These contain the lecture slides for the part you are working on, and there are video examples with documents containing the work written out. In addition, reading from *Loss Models* and *Introduction to Ratemaking and Loss Reserving for Property and Casualty Insurance* is prescribed. There you will find another perspective on the course content. In addition to the slides, videos, and textbook, you can always visit me during my office hours!

The documents posted before the video examples will be the most up to date of the course content. The videos will usually be up to date; however, due to the labor involved in recording and editing a video, there could be a lag in any video corrections.

Homework: Assignments can be found on Carmen's modules. Each assignment comes with problems that are suggested and problems that are due. The suggested problems are usually for extra practice; however, there are times where they will be necessary to complete a problem that is due. Those that are for practice will have solutions provided. You will only be assessed on the problems that are labeled problems due (PD). To submit an assignment, you take an online "quiz" by clicking on the homework assignment for that part of the course and clicking on "Take The Quiz." The assignment is graded immediately upon submission, and you get unlimited attempts before the due date. Each homework assignment is worth 10 points, and the lowest homework is dropped.

In addition to our computational assignments, there will be three actuarial article reviews that you will be expected to submit throughout the semester. In total, these will be worth approximately 10% of your final grade.

Group Work: You will be divided into small groups and expected to write problems that would be of the caliber of exam questions. This will be done twice this semester. You will be graded based on question quality and clarity of solution.

For a final group assignment, your group will create a lesson regarding a topic in our course. Your group will create a presentation covering that material.

Mini-Exams: There will be four mini-exams in in this course. The first mini-exam is over the syllabus, and you will be required to take it to access the Unit 1 module. You will be given unlimited attempts at the first mini-exam. The remaining mini-exams are 35 minutes of multiple choice, numerical answer, and file upload questions. You will only have on opportunity to take these online mini-exams. In addition, you will need to submit a solution to one of your problems. You can do this using either your phone to take a high-resolution picture or use a scanner. Just make sure you allot the requisite time to complete this task!

After completion of the mini-exam, you must submit all your work in the mini-exam follow up assignment. Make sure to do this immediately following completion of your mini-exam (within 20 minutes). Included in your submission will be your name on every sheet for submission and labels for each problem. Ideally, you will scan all of your work as one document; however, this is not necessary.

Exams: There are two exams: a midterm and a final. Exams will be given just as the mini-exams are given. You will be required to submit a small selection of the problems you did on the exam. Each exam is 70 minutes. Once again, you must make sure to allot the requisite time to complete an upload.

After completion of the exam, you must submit all your work in the exam follow up assignment. Make sure to do this immediately following completion of your exam (within 20 minutes). Included in your submission will be your name on every sheet for submission and labels for each problem. Ideally, you will scan all of your work as one document; however, this is not necessary.

Exam Integrity: Due to the nature of this course, it is likely that you will take your mini-exams and exams at different times than other students. Please refrain from discussing your assignment until after the assignment closes to the course. Failure to do so will be considered academic misconduct.

Course Updates: Every now and then announcements to the entire course need to be made. These announcements will be made using the announcements feature on Carmen. It is your responsibility to check the news for this course. You can sign up for announcement notifications so that you are aware of any such updates. Additionally, questions that would benefit the whole class should be posted to the discussion titled "Course Q&A."

Course Technology: You will need a document camera or scanner for the homework assignments, mini-exams, and exams.

You may use any calculator you desire on all assignments.

For office hours, you will need to be able to communicate with me using Zoom. This means you will need access to a good internet connection. In addition, it would be advantageous if you also have access to a microphone on your computer. That way, you can ask me questions regarding course content. The alternative is to try to use the chat feature on Zoom; however, this is less efficient.

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Dest. Standard support hours are available at `https://ocio.osu.edu/help/hours`, and support for urgent issues is available all hours.

- **Self-Service and Chat support:** `http://ocio.osu.edu/selfservice`
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Email Etiquette: Outside of class time, the primary means of communication between us will be email. Please treat any emails you send me as a professional correspondence. Your email should have a subject, a greeting, and some sort of signature. During weekdays, you can expect email replies from me within 24 hours of your message.

Other Course Policies: There is a Q&A section in the course discussions. You can expect me to reply to inquiries there within 24 hours. This section is reserved for questions regarding course policies. These are typically questions that would benefit all students in the course. Submitting questions here will save you and I some time!

Advising: For help navigating this large university, you will find that you need advising. In addition, advisors can help you get information regarding accessing course materials to meet the needs of diverse learners. For more information, visit the university's advising website at `https://advising.osu.edu/`. In addition to advising services, OSU main campus students may find assistance at student academic services.

Copyright Disclaimer: "The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course."

Statement on Title IX:	"Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at `http://titleix.osu.edu` or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu."
Academic Misconduct:	"It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7). For additional information, see the Code of Student Conduct at `http://studentlife.osu.edu/csc/`."
Students with Disabilities:	"Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disabilities Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall 113 W. 12th Avenue; telephone 614-292-3307; slds@osu.edu; `slds.osu.edu`."
Accessibility of Course Technology:	"This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor. • Carmen (Canvas) accessibility • Streaming audio and video • Synchronous course tools"
Your Mental Health:	"As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting `ccs.osu.edu` or calling 614- 292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at `suicidepreventionlifeline.org`."

Description	Readings (from Loss Models)
Unit 1: Frequentist Estimation (3 weeks)	Chapters 13 & 14
Unit 2: Bayesian Estimation and Testing (3 weeks)	Chapters 15 & 16
Unit 3: Credibility (2 weeks)	Chapters 17 & 18
Unit 4: Empirical Bayes' Estimation (2 weeks)	Chapter 19
Unit 5: Simulation and Ratemaking (4 weeks)	Chapter 20 and Chapters 1-3 from Ratemaking

Important Dates

Mini-Exam 1 (Syllabus) window: Now until you achieve a perfect score!

Mini-Exam 2 window: January 23 at 12am-January 26 at 11:59pm

Midterm window: February 17 at 12am-February 21 at 11:59pm

Mini-Exam 3 window: March 5 at 12am-March 8 at 11:59pm

Mini-Exam 4 window: March 26 at 12am-March 29 at 11:59pm

Final Exam window: April 20 at 12am-April 24 at 11:59pm

Math 5634: Loss Models II

Spring Semester 2021 – The Ohio State University

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Office:	Mathematics Building 210
Office Hours:	Tuesdays from 4-5pm in a Zoom meeting or by appointment.
Email:	waller.44@osu.edu
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	In addition to our computational assignments, there will be three actuarial article reviews that you will be expected to submit throughout the semester. In total, these will be worth approximately 10% of your final grade.
Quizzes:	There will be 3 quizzes in class.
Exams:	There is a midterm and final exam. Questions will typically be short answer; however, other types of questions are possible.
Group Work:	You will be divided into small groups and expected to write problems that would be of the caliber of exam questions. This will be done twice this semester. You will be graded based on question quality and clarity of solution.
	For a final group assignment, your group will create a lesson regarding a topic in our course. Your group will create a presentation covering that material.
Corrections:	In case there is an error in grading or tabulating, you need to write a short petition explaining your case. This petition must be stapled on top of the assignment and handed to me no later than one week after I have returned the assignment to the class.
Course Updates:	Every now and then announcements to the entire course need to be made. These announcements will be made using the news feature on Carmen. It is your responsibility to check the news for this course. You can sign up for news item notifications so that you are aware of any such updates.

Calculator Policy: Only SOA approved calculators are allowed during exams. One of the goals of this course is to become proficient in the use of these calculators.

`https://www.soa.org/education/exam-req/exam-day-info/edu-calculators.aspx`

Email Etiquette: Outside of class time, the primary means of communication between us will be email. Please treat any emails you send me as a professional correspondence. Your email should have a subject, a greeting, and some sort of signature.

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Unit 4: Empirical Bayes' Estimation (2 weeks)	Chapter 19
Unit 5: Simulation and Ratemaking (4 weeks)	Chapter 20 and Chapters 1-3 from Ratemaking

Important Dates (in class)

Quiz 1 on 1/23

Midterm Review on 2/11

Midterm on 2/13

Quiz 2 on 3/5

Quiz 3 on 3/26

Final Review on 4/14

Final Exam on 4/16

Arts and Sciences Distance Learning Course Component Technical Review Checklist

Course: Math 5634
Instructor: Bradley Waller
Summary: Loss Models II

Standard - Course Technology	Yes	Yes with Revisions	No	Feedback/ Recomm.
6.1 The tools used in the course support the learning objectives and competencies.	X			• Carmen • Office 365 • CarmenZoom
6.2 Course tools promote learner engagement and active learning.	X			• CarmenZoom • Carmen Quizzes
6.3 Technologies required in the course are readily obtainable.	X			All are available for free via OSU site license
6.4 The course technologies are current.	X			All are updated regularly.
6.5 Links are provided to privacy policies for all external tools required in the course.	X			No external tools are used
Standard - Learner Support				
7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.	X			Links to 8HELP are provided.
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	X			a
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	X			b
7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.	X			C
Standard – Accessibility and Usability				
8.1 Course navigation facilitates ease of use.	X			Recommend using the Carmen Distance Learning "Master Course" template developed by ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content.
8.2 Information is provided about the accessibility of all technologies required in the course.	X			Accessibility links are provided for all tools.
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	X			
8.4 The course design facilitates readability	X			Comes across like a wall of text. This could be solved by using the distance learning syllabus template.
8.5 Course multimedia facilitate ease of use.	X			All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser

Reviewer Information

- Date reviewed: 8/6/20
- Reviewed by: Ian Anderson

Notes: Consider using the distance learning syllabus template. Please assign dates to the weekly breakdown.

[a]The following statement about disability services (recommended 16 point font): Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu.

[b]Add to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus. http://advising.osu.edu/welcome.shtml

[c]Add to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. http://ssc.osu.edu. Also, consider including this link in the "Other Course Policies" section of the syllabus.