

	Room	Time	Office hours	Office	Phone	Instructor
Section 002	Online through iCollege	Asynchronous (Monday)	Tuesday, Thursday 1:00 PM–5:00 PM	RCB 1123	(404) 413-7485	Stefanos Orfanos sorfanos@gsu.edu

Course Information

Course Objective: Preparation for CAS Exam 5/SOA Exam STAM, and to work as a casualty actuary.

By the end of this course, students will be able to:

- Understand the terminology and explain the main concepts and techniques of ratemaking and reserving for property & casualty (also known as general or non-life) insurance
- Critique other analysts' actuarial work
- Review loss data for appropriateness and completeness
- Perform concrete rating and reserving calculations for various coverages

The following topics will be covered: Introduction to P&C Insurance and Terminology, Development Triangles, Loss Development Technique, The Expected Loss Ratio Technique, Bornhuetter-Ferguson Technique, On-Level Premium and Losses, Rate Indications, Expenses and Components of Rates, Classification Ratemaking, Data Considerations, Advanced Classification Techniques, Reinsurance, Catastrophe Pricing.

Prerequisites: AS 8350 (not really needed) or permission of instructor.

Resources: All are freely available online.

- (A) Anderson, D., Feldblum, S., Modlin, C., Schirmacher, D., Schirmacher, E. and Thandi, N., *A Practitioner's Guide to Generalized Linear Models (Third Edition)*, CAS Study Note, February 2007. Link to text: casact.org/pubs/dpp/dpp04/04dpp1.pdf
- (B) Bailey, R.A. and Simon, L.J., *An Actuarial Note on the Credibility of Experience of a Single Private Passenger Car*, PCAS XLVI, 1959. Link to text: casact.org/pubs/proceed/proceed59/59159.pdf
- (C) Clark, D. R., *Basics of Reinsurance Pricing*, CAS Study Note, Revised 2014. Link to text: casact.org/library/studynotes/Clark_2014.pdf
- (F) Friedland, J.F., *Estimating Unpaid Claims Using Basic Techniques*, Casualty Actuarial Society, Third Version, July 2010. Link to text: casact.org/library/studynotes/Friedland_estimating.pdf
- (M) Mack, T., *Measuring the Variability of Chain Ladder Reserve Estimates*, Casualty Actuarial Society Forum, Spring 1994. Link to text: casact.org/pubs/forum/94spforum/94spf101.pdf
- (P) Patrik, G.S., *Reinsurance, Foundations of Casualty Actuarial Science (Fourth Edition)*, Casualty Actuarial Society, 2001. Link to text: casact.org/library/studynotes/ch7.pdf
- (Wa) Walters, M. A. and Morin, F., *Homeowners Ratemaking Revisited (Use of Computer Models to Estimate Catastrophe Loss Costs)*, PCAS LXXXIV, 1997. Link to text: casact.org/pubs/proceed/proceed97/97001.pdf
- (We) Werner, G. and Modlin, C., *Basic Ratemaking*, Casualty Actuarial Society, Fifth Edition, May 2016. Link to text: casact.org/library/studynotes/Werner_Modlin_Ratemaking.pdf

Assessment: There will be:

- (i) Five midterm projects, approximately every two weeks and worth 15% of your grade each.
- (ii) A final project, due on finals week, and worth 25% of your grade.

We will follow the official GSU grading system: A is 90 or above, B is 80–89, C is 70–79, D is 60–69, with +/– scores given for the top/bottom 30% within each grade.

Tentative Schedule

The course syllabus provides a general plan for the course; deviations may be necessary.

Week	Topic	Reference	Assessment
1	Introduction to P&C Insurance and Terminology	[We] §1, [F] §1-3	
2	Introduction to P&C Insurance and Terminology	[We] §1, [F] §1-3	
3	Labor Day— no classes		
4	Development Triangles	[We] Ch. 3, [F] §5-6	Project 1 due 9/14
5	Loss Development Technique	[F] §7, [M]	
6	Reinsurance; The Expected Loss Ratio Technique	[P], [F] §8	Project 2 due 9/28
7	Bornhuetter-Ferguson Technique	[F] §9	
8	On-Level Premium and Losses	[We] §4-5	Project 3 due 10/12
9	Rate Indications	[We] §2,8	
10	Expenses and Components of Rates	[We] §7	
11	Classification Ratemaking and Data Considerations	[We] §10,12, [B]	Project 4 due 11/2
12	Advanced Classification Techniques	[A]	
13	More on Reinsurance	[C]	Project 5 due 11/16
14	Thanksgiving Break— no classes		
15	Catastrophe Pricing	[Wa]	
16	Consultation for Final Project		
17			Final Project due 12/14

Policies and Advice

Office hours: You can utilize my WebEx address: <https://gsumeetings.webex.com/meet/sorfanos> or we can meet in person in my office. I am also available to schedule virtual meetings outside my stated hours.

Attendance and Preparation: This is an online course and ‘attendance’ is understood to mean online participation of submission of work by its due date. Because there is considerable material to be covered, we will move at a rapid pace. Thus, active engagement on your part is very important – you are expected to participate and keep up with the class.

A special word to VA students: Due to required University oversight of students receiving VA benefits, you have a special burden of faithful class attendance. Under present guidelines, absence for a ten-consecutive calendar day period necessitates a report to that effect to the VA Office at GSU, with (presumably) a consequent adverse effect on your status vis-a-vis the U.S. Government. Please keep this in mind.

GSU Withdrawal Policy: A student who withdraws prior to the midpoint in the semester or term will be awarded a W. A student who withdraws after the midpoint will automatically receive a WF. You are responsible for understanding and adhering to the W limit policy.

Incompletes: We do not give incomplete grades in this course, except for cases where a student missed the final examination for an excusable reason. According to GSU policy, the grade will automatically be converted to an F if it is not removed by the end of the second academic term after the I is assigned.

Disability Statement: Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services. Students may only be accommodated upon issuance by the Office of Disability Services of a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought. Please let me know if you have a disability or special need that requires accommodation.

GSU Academic Honesty: Refer to Policy on Academic Honesty at codeofconduct.gsu.edu. Below is a brief summary.

Behavior consistent with College and University policies on academic honesty and treatment of members of the University community is expected of all. Cheating, plagiarizing, submitting the material for credit in more than one class, and other deceptive conduct with respect to a student’s work output will be dealt with according to the University Policy on Academic Honesty.

Course Evaluation: Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation.