MATH 653 Construction and Evaluation of Actuarial Models

Fall 2022 Dept. of Mathematical Sciences, George Mason University, Fairfax, VA

Instructor: Mahendra Panagoda E-Mail: mpanagod@gmu.edu Office Hrs.: By Appt. via prior e-mail

Note that this class is Hybrid but will mostly be virtual. You will receive a zoom invitation if you are registered for the class.

Day and Time: Mondays at 7:20 p.m. till 10:00 p.m.

Course Objective: This course lays the groundwork for SOA Exams STAM and ASTAM (offered starting in 2023). The course is self-contained, and we will develop the necessary material as the classes progress. An emphasis will be placed on successful preparation for SOA Exams which are multiple choice and sometimes computer based (CBT). For more information on exams and pathways to credentials, please checkout the website www.soa.edu and the links within.

Some items that we will be studying:

- How best to study successfully for Actuarial Exams – tips, suggestions, and roadmaps to success
- Parametric Distributions, discrete and continuous, generating new distributions by scaling
- Examples of commonly used distributions such as Poisson, Binomial, Normal, Pareto and Negative Binomial
- Quantities of interest in parametric models in Actuarial setting
- Selecting models based on various scores, for example AIC, BIC and Kolmogorov-Smirnov
- Risk measures such as VaR and TVaR and their uses

Grading: The grading scheme is as follows:

HWs (about 4-5)	Mid-Term (take Home)	Final (take Home)	Project (Group_)
25%	25%	25%	25%

Text: *Text for the class is Loss Models: From Data to Decisions, (Fifth Edition), 2019, by Klugman, S.A., Panjer, H.H. and Willmot, G.E., Wiley, ISBN: 978-1-119-52378-9*

Academic Integrity:

Please see The Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously, in this class. When you are responsible for a task, you will perform that task on your own and specify if any references used. Please give full credit in the proper, accepted form, if your work rely on other scholastic papers/ideas/discussions. If you are not sure, please ask for guidance and clarification.

Mason email accounts. Students must use their MasonLIVE email account for any correspondence during this course. For more information see: http://masonlive.gmu.edu.

Office of Disability Services. If you are a student with a disability and you need academic accommodations, please contact the Office of Disability Services (ODS) at 993-2474, http://ods.gmu.edu. All academic accommodations must be arranged through the ODS. Please be sure to inform me as well.

University policies The University Catalog, http://catalog.gmu.edu , is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs.

Another resource is: http://universitypolicy.gmu.edu .