ACTS6307–Advanced Statistics for Risk Modeling
Fall 2022 Syllabus and Course Policy

Time: Monday and Wednesday 1:00 pm – 2:15 pm **Room**: CB 1.206
Instructor: Liang Hong, PhD, FSA **Office**: PHY 1.900
Office Phone: (972) 883-2161 **Email**: liang.hong@utdallas.edu
Personal Webpage: `https://sites.google.com/view/lianghong`
Office Hours: Monday and Wednesday 2:30-3:30 pm or by appointment

TEXTBOOK: There is no required textbook. The following books are recommended:

- Frees, E. (2010). *Regression Modeling with Actuarial and Financial Applications*. Cambridge University Press: Cambridge.
- James et al. (2017). *An Introduction to Statistical Learning with Applications in R*. Springer: New York. (This book and its second edition is available at `https://www.statlearning.com`.)
- Weishaus, A. (2020). *ASM Study Manual For SRM-Statistics for Risk Modeling*, 2nd Edition. ASM.

SOFTWARE: No software is required for this course. However, I might post R or Python code on UTD eLearning.

PREREQUISITES: STAT 5352 or permission of the instructor.

COURSE DESCRIPTION: The purpose of this class is to provide an understanding of the basics of several important analytic methods such as linear models, time series models, principal components and cluster analysis, and decision trees. This class covers parts of the SOA Exam SRM and leads the student to the deeper preparation for the SOA Exam PA — Predictive Analytics.

ATTENDANCE: Attendance is required of all students without exception. Attendance is a key factor in academic success. A student absent from class bears full responsibility for all material covered in class. ***Attendance*** means being present at the scheduled start time and remaining for the entire class period. Attendance is worth 10% of your semester grade.

PROJECTS AND PRESENTATIONS: There will be a midterm take-home project and a final take-home project. Each project is worth 30% of your final grade. For each project, there is an in-class presentation; each presentation is worth 15% of your semester grade.

PROJECT AND PRESENTATION DATES:

- Midterm Project Due Date: to be given at 1:00 pm on Monday (10/3/2022) and due at 1:00 pm on Monday (10/10/2022).
- Midterm Project Presentation: Monday (10/10/2022) and Wednesday (10/12/2022) ; 10-15 minutes for each presentation.
- Final Project Due Date: to be given at 1:00 pm on Monday (11/28/2022) and due at 1:00 pm on Monday (12/5/2022).
- Final Project Presentation: Monday (12/5/2022) and Wednesday (12/7/2022) ; 10-15 minutes for each presentation.

MISSED PROJECT/PRESENTATION: Students must submit their projects by the due date; they are also expected to do the presentation on the scheduled days/times.

GRADING POLICY : The final letter grade will be based on your total cumulative percentage which will be computed as follows:

$$A \geq 93\% > A- \geq 90\% > B+ \geq 85\% > B \geq 80\% > B- \geq 75\% > C \geq 70 > D \geq 60 > F \geq 0.$$

ACCOMMODATION FOR STUDENTS WITH DISABILITIES: UT Dallas is strongly committed to ensuring and maintaining an environment that guarantees students with disabilities full access to educational programs, activities, communication systems, and facilities. The Office of Student AccessAbility (OSA) has been delegated the authority to prescribe types of reasonable accommodations each student is eligible to receive with the support and understanding of our committed faculty. Students who have registered and are eligible to receive accommodations must provide the instructor with an accommodation letter on OSA letterhead as soon as possible. (This can be done after the class or via emails to protect the privacy of the student.) Only students who provide such a letter should be accommodated. (OSA can be reached by phone at (972) 883-2098 or via email at studentaccess@utdallas.edu.)

ACADEMIC INTEGRITY POLICY: The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of

any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.