

STATISTICS – STAT 4033

Syllabus

1. Instructor information:

Instructor name:

Email:

Phone:

Cell phone:

Office:

Office hours:

2. Class room:

- Main class room (campus):
- Online classroom (website):
- Class meeting time: weekly
- Library hours (where): VNU-Library.

3. Course information:

- Course description:

Credit: 3.

The mathematical theory of probability and statistics gives us the basic tools for constructing and analyzing mathematical models for random events. This course is designed as a review of advanced topics in researching random phenomena for science and engineering students who get the background knowledge in applying probability and statistics for their specific fields.

- Course objectives:

The objectives of this course are three:

- (1) To introduce students to standard concepts and methods of stochastic modeling.
- (2) To illustrate the rich diversity of applications of probability and statistics in the sciences
- (3) To provide exercises in the application of simple stochastic analysis to appropriate problem.

- Prerequisite:

Calculus 2153 and 2144, Math 3013

4. Book and materials:

- Required textbook:

Fundamentals of Probability and Statistics for Engineers by T.T.Soong

John Wiley & Sons 2004

- Other materials:

- An introduction to Probability and statistics by Vijay K.Rohatgi; A.K.MD Ehsanes Saleh

New York: John Wiley & Sons 2001

- Miller and Freund’s Probability and Statistics for Engineers (Fifth Edition) by Richard A. Johnson; Prentice – Hall, Inc 1994

- Course website:

5. Course requirements:

- Assignments: Exercises are in corresponding sections of the required book.

- Computer-based training and testing: . . .

• Projects or Team Class Projects: Projects are given by the instructor after finishing a chapter.

- Midterm Examinations:

- Class attendance/participation: Evaluated by checking in the Attendance Book

- Final Examination: Students are directly tested and automatically marked on computers.

6. Grading Procedures:

Assignments:	20%
Quizzes:	
Computer-based training and testing:	
Projects or Team Class Projects:	10%
Midterm Examinations:	25%
Class attendance/participation:	5%
Final Examination:	40%

Total point and Grades:

90-100: Good (A)	80-89: Well (B)	70-79: Mean (C)
60-69: Weak (D)	50-59: bad (E)	1-49: too bad (F)

7. Academic integrity Policies:

- Student may not be absent in 4 sessions. If so, he/she will be prohibited from test or exam
- Student may not use Vietnamese language in their class, or will be reduced 2% final marks
- Be punctual to come and leave the class.
- Maximum cancellation time per semester is 6 hours per class.

8. Course outline:

Session	Topics	Assignments
1	Introduction	
2	Part A: PROBABILITY AND RANDOM VARIABLES Chapter 1: Basic Probability concepts	
3	Chapter 2 – Random variables and probability distribution - Conditional Distribution and Independence	
4	Chapter 3 – Expectations and moments - Characteristic functions	
5	Chapter 4 – Functions of random variables - Functions of two or more random variables	
6	Chapter 5 – Some important discrete distributions - Some important continuous distributions	
7	Chapter 6 – Limit Theorem – Law of large number - Central limit theorem	
8	EXAM	
9	Part B: STATISTICAL INFERENCE, PARAMETER ESTIMATION, AND MODEL VERIFICATION Chapter 7: Observed data and graphical representation	
10	Chapter 8 – Parameter estimation - Point estimation; interval estimation	
11	Chapter 9 – Model verification	
12	Chapter 10 – Non parametric statistic inference	
13	Chapter 11 – Linear models and linear regression - Simple and multiple linear regression	
14	Introduction of statistic computer softwares	

15	FINAL EXAM	
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- Schedule, deadlines, deliverables by week: Students submit weekly Assignments

9. Comments and notes:

- Make-up: Make-up classes are officially accepted after the Make-up forms are signed by all of the students in the class and directly send to the Registrars.
- Preparation for Class: It is expected that the students read related chapter in textbook and lecture noted before each class. This will help to capture the topics presented and discussed during class hours.
- Use of Class Time: Class time will be used mainly for lectures and discussions. A small part of class hours is used for testing. House works will be discussed on individual basis.
- Class Attendance: Due to the broad range of topics discussed throughout the course and their inter-relationship, it is requested that the students should attend the class regularly.
- Incomplete Grade: A grade of “I” (Incomplete) will be administered only under extreme, verifiable “emergency” situation where the student is unable to complete some portion of the course work due to circumstances beyond his/her control PROVIDED THE STUDENT IS PASSING THE COURSE.
- Assignment Requirement: Assignments of each session must be submitted by email before the next session begins.

Instructor’s Signature