DONGGUAN UNIVERSITY OF TECHNOLOGY

School of Economics and Management

Course Syllabus

Fall 2017

Instructor Information

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| Instructor | Chih-Yuan Hung |
| E-mail | chihyuanhung@qq.com |
| Phone | 18826831242; 77527 |
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| Office | 2303 Guancheng Campus |
| Office Hours | Tuesday 10:25-12:00; By Appt. |

Student Information

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| Entry Year | 2016 |
| Level | Undergraduate |
| Major | Economics and Finance (Financial Management International Program) |

Course Information

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| Course Code | 088364 |
| Course Title | Probability and Mathematical Statistics |
| Course Category | Compulsory ☐Elective |
| Credit(s) | 3 |
| Total Hours | 54 |
| Hours per week | 4 hours for week 1 to 9; 2 hours for week 10 to 18 |
| Practical Hours | 18 |
| Lab Practice Hours | None |
| Classroom | 2410 Guancheng Campus |
| Time | Tuesday, 14:30-16:10(week 1 to 9);  Thursday, 10:25-12:00 |
| Required Textbook | Ross, Sheldon. *A First Course in Probability* *(9th Edition)*. Pearson Education, 2014; China Machine Press, 2017. |
| Supplementary Materials | DeGroot, Morris H. and Schervish, Mark J. *Probability and Statistics (4th Edition)*. Pearson, 2011; China Machine Press, 2012. |
| Prerequisites | Advanced Mathematics B |

Assessment and Grading

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| Assignments | Percent of Final Grade |
| Attendance | 12% |
| Test/ Problem set | 18% |
| Midterm | 30% |
| Final | 40% |
| Total | 100% |

Course Description

This is the introductory course to Probability and Mathematical Statistics for the sophomores in the program of Financial Management in International Business. Probability is the fundamental knowledge for further studies in quantitative analysis. It deals with that what is a random event, how we measure the randomness and how we make the prediction. The course starts from counting principles and the axiom of probability. Then group things into what we call “distributions,” in order to figure out the patterns of random. Finally, we construct some measures about the distributions and how these measures represent the population behind the distributions.

Course Objectives

* Learn basic probability theories and concepts.
* Learn how to apply probability theories/concepts to better understand, predict, and estimate the statistical data.
* Increase your personal self-awareness of the data, randomness, and skills that affect your performance in statistical contexts.

Course Expectations

This course will include some basic mathematics on sets, combinations, as in the comparable high-school math courses. Also, the knowledge about calculus is required. There are no other prerequisites.

Course Schedule

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| Week/Date | Topic | Required Reading and Assignments |
| 1/Sep. 5, 7 | Combinatorial Analysis | Preface  Chapter 1 Problems |
| 2/Sep. 12, 14 | Axioms of probability | Chapter 2 Problems 1~15 |
| 3/Sep. 19, 21 | Propositions of probability  Test 1(Sep. 21) | Chapter 2 Problems 16~30 |
| 4/Sep. 26, 27 | Conditional Probability | Chapter 2 Problems 31~46 |
| 5/Oct. 3, 5(hold at Sep. 30) | National Holiday (Oct. 3)  Independent Events | Chapter 2 Problems 47~56  Chapter 3 Problems 1~20 |
| 6/Oct. 10, 12 | Expected Values: mean and variance  Discrete Random Variables | Chapter 3 Problems 21~40 |
| 7/Oct. 17, 19 | The Bernoulli and Binomial Random Variables  Test 2 ( Oct. 26) | Chapter 3 Problems 41~60 |
| 8/Oct. 24, 26 | Poisson, Geometry and Hyper Geometry Distributions | Chapter 3 Problems 61~80 |
| 9/Oct. 31, Nov. 2 | Expected Value of Sums of Random Variables  Properties of the Cumulative Distribution Function | Chapter 3 Problems 81~91  Chapter 4 Problems 1~10 |
| 10/Nov. 9 | Midterm Exam |  |
| 11/Nov. 16 | Continuous Random Variables | Chapter 4 Problems 11~30 |
| 12/Nov. 23 | The Uniform Random Variable | Chapter 4 Problems 31~50 |
| 13/Nov. 30 | Normal Random Variable I | Chapter 4 Problems 51~70 |
| 14/ Dec. 7 | Normal Random Variable II | Chapter 4 Problems 71~85 |
| 15/Dec. 14 | Test 3 | Chapter 5 Problems 1~10 |
| 16/Dec. 21 | Exponential Random Variables | Chapter 5 Problems 11~20 |
| 17/Dec. 28 | Other Continuous Random Variables | Chapter 5 Problems 21~30 |
| 18/Jan. 4 | The Distribution of a Function of a Random Variable | Chapter 5 Problems 31~42 |
| Date:  Reviewed by  Signature  Director of  Department of International Business and Management | | |