



**University of International Business and Economics  
International Summer School**

**STAT 220 Introduction to Statistics**

**Term: May 25 – June 25, 2020**

**Instructor: Shen Fan**

**Home Institution: China University of Petroleum**

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**Class Hours: Monday through Thursday, 120 minutes each day (2,400 minutes in total)**

**Office Hours: TBD**

**Discussion Session: 2 hours each week**

**Total Contact Hours: 64 contact hours (45 minutes each, 48 hours in total)**

**Credit: 4 units**

**Course Description:**

*Statistics* is the study of data and how it can be collected, organized, analyzed and interpreted to obtain insights. *Descriptive* statistics focuses on organizing and summarizing data so that it is better understood. *Inferential* statistics leverages data from a small group to arrive at conclusions about the entire population of which the small group is a part. Statistics is part of everyday life. One of the most sought-after job areas these days is business analytics, which refers to the application of statistics to obtain important insights from data available to organizations.

**Course Goals:**

We will first introduce data and statistics, data presentations, measures of centrality and variation, discrete and continuous probability, hypothesis testing for populations and parameters, Chi-square tests, analysis of variance.

**Required Textbook:**

De Veaux, Velleman and Bock, *Stats: Data and Models*, Pearson, ISBN 13: 978-1-292-10163-7

**Grading Policy:**

Grading will be determined by a combination of class attendance and participation, and the results of your exams. Attendance and Participation 10%, Midterm Exams 40%. Final Exam 50%.

**Grading Scale:**

Assignments and examinations will be graded according to the following grade scale:

A	90-100	C+	72-74
A-	85-89	C	68-71
B+	82-84	C-	64-67
B	78-81	D	60-63
B-	75-77	F	below 60

### Class Rules:

Students are expected to come to lecture having read the material assigned for the day, and prepared to engage in active discussion about those ideas.

### Attendance Policy:

Summer school is very intense and to be successful, students need to attend every class. Occasionally, due to illness or other unavoidable circumstance, a student may need to miss a class. UIBE policy requires a medical certificate to be excused. Any unexcused absence may affect the student's grade. Moreover, UIBE policy is that a student who has more than 1/3 (6 times) of the class in unexcused absences will fail the course.

### Course Schedule:

#### Week One:

Monday: What are Statistics? Displaying and Describing Categorical Data

Tuesday: Quantitative Data, Distributions

Wednesday: Standard Deviation, Scatterplots

Thursday: Linear Regression, Regression Wisdom

#### Week Two:

Monday: Re-expressing data, Randomness

Tuesday: Sample Surveys, Experiments and Observational Studies

Wednesday: Review first 12 chapters and First tests

Thursday: Probability, Probability Rules

#### Week Three:

Monday: Random Variables

Tuesday: Probability models

Wednesday: Sampling Distribution Models,

Thursday: Confidence Intervals, Testing Hypotheses

#### Week Four:

Monday: Inference about Means, Tests and intervals

Tuesday: Comparing Groups

Wednesday: Paired Samples and Blocks, Comparing counts

Thursday: Inferences for Regression



**Week Five:**

Monday: Analysis of variance

Tuesday: Multifactor Analysis of Variance

Wednesday: Multiple Regression

Thursday: Final Exam.