



International College, Suan Sunandha Rajabhat University

Course Code: IBU 2205: Business Statistics 3(3-0-6)

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IBU 2205: Business Statistics 3(3-0-6)

Rationale:

Business Statistics course is designed to develop an understanding and working knowledge of statistics and statistical procedures. It is a **Business Core Course** of the Bachelor of Business Administration (B.B.A.) degree. This course is intended to provide a background capacity in statistical description and analysis, appropriate for a business student. The focus of the course is on the practical use of data in a business/economic decision environment, especially in an environment of risk and uncertainty. The students who enroll in this course need a background in algebra and business mathematics.

Course Description:

This course is a study of statistical methods, descriptive statistics and inferential statistics. This course uses a problem solving approach that focuses on proper interpretation and use of statistical information, while developing necessary understanding of the underlying theory and techniques. Topics include the role of statistics in modern business environments and for management information, data collection, data tabulation, probability concepts and probability distributions, sampling distribution, interval estimation and hypothesis testing, correlation and regression analysis.

Objectives:

On completion of this course, students will be able to:

1. Use and apply knowledge learn in sampling, data description and data presentation in a business environment;
2. Apply basic probability concepts and probability distributions as an aid to business decision making;
3. Demonstrate an understanding from the knowledge learn and apply some fundamental statistical methodology to solve problems; and
4. Conduct case study project, apply statistics methods using statistics software program and problem-based learning approach.

Course Outline:

| Week | Date | Contents | Learning Activities |
|------|-----------------------------------|--|--|
| 1 | Friday 19 Jun 09 9.00-12.00 | <ul style="list-style-type: none"> • Statistics methods • Quantitative and Qualitative Data • Descript Statistics methods • Data presentation <ul style="list-style-type: none"> ○ Histogram, frequency polygons and Frequency Curve | <ul style="list-style-type: none"> • Lecture and group discussion • Student-centered: Constructivist approaches and Cooperative learning • Descriptive Data collection |
| 2 | Friday 26 June 09 | <ul style="list-style-type: none"> • Data presentation (cont.) <ul style="list-style-type: none"> ○ Bar chart, Line graph, and Pie chart ○ Stem-and-leaf Plot • Data presentation using computer software program such as Excel, SPSS and Fathom | <ul style="list-style-type: none"> • Lecture and group discussion • Student-centered: Problem-Based learning and Cooperative learning approaches • Hands-on activities |
| 3 | 3 July 09 | <ul style="list-style-type: none"> • Population and Sample • Data and data collection • Introduction to Descriptive Statistics • Measure of Central Tendency <ul style="list-style-type: none"> ○ Mean Mode and Median • Box Plot • Summation notation | <ul style="list-style-type: none"> • Lecture and Cooperative learning: Group discussion • Problem-Based learning and Hands-on activities • Self-study and E-learning • Mini assignment |
| 4 | 10 July 09 | <ul style="list-style-type: none"> • Measurement of dispersions: <ul style="list-style-type: none"> ○ Standard deviation ○ Variance | <ul style="list-style-type: none"> • E-learning and self- study • Student-centered: Problem-Based learning and Cooperative learning approaches • Hands-on activities |
| | | <ul style="list-style-type: none"> • Problem-Based Learning Project Work -1: Statistics and data collection | |
| 5 | 17 July 09 | <ul style="list-style-type: none"> • Scatter diagram • Linear Regression | <ul style="list-style-type: none"> • Lecture and group discussion • E-learning and self- study |
| 6 | 24 July 09 | Measurement of dispersions: <ul style="list-style-type: none"> • Coefficient of correlation • Using Fathom or Excel for Regression | <ul style="list-style-type: none"> • Student-centered: Problem-Based learning and Cooperative learning approaches • Hands-on activities • E-learning and self- study |
| 7 | 31 July 09 | Probability <ul style="list-style-type: none"> • Independent events, Dependent events • Conditional probability • Probability and Tree diagram | <ul style="list-style-type: none"> • Student-centered: Problem-Based learning and Cooperative learning approaches • Hands-on activities • Self-study |

| Week | Date | Contents | Learning Activities |
|------|------------|---|---|
| 8 | 7 Aug 09 | Probability Distribution and Random variable <ul style="list-style-type: none"> Binomial Distribution Chi Square | <ul style="list-style-type: none"> Lecture and group discussion Student-centered: Problem-Based learning and Cooperative learning approaches Hands-on activities |
| 9 | 14 Aug 09 | Midterm Test | |
| | 14 Aug 09 | Problem-Based Learning Project Work -2 | |
| 10 | 21 Aug 09 | Probability Distribution and Random variable: <ul style="list-style-type: none"> Normal Distribution The Standard Normal Distribution | <ul style="list-style-type: none"> Lecture and group discussion Student-centered: Problem-Based learning and Cooperative learning approaches |
| 11 | 28 Aug 09 | <ul style="list-style-type: none"> Introduction to Inferential Statistics Sampling and Sampling Distribution | <ul style="list-style-type: none"> Lecture and Cooperative learning: Group discussion Problem-Based learning and Hands-on activities Self-study and E-learning |
| 12 | 4 Sept 09 | Estimation: <ul style="list-style-type: none"> Point Estimation Interval Estimation and Confidence Interval | <ul style="list-style-type: none"> Lecture and Cooperative learning: Group discussion Problem-Based learning and Hands-on activities Self-study and E-learning |
| 13 | 11 Sept 09 | Hypothesis Testing -1 | <ul style="list-style-type: none"> Lecture and Cooperative learning: Group discussion |
| 14 | 18 Sept 09 | Hypothesis Testing -2 | <ul style="list-style-type: none"> Problem-Based learning and Hands-on activities Self-study and E-learning |
| 15 | 25 Sept 09 | Problem-Based Learning Project Work Presentation | <ul style="list-style-type: none"> Cooperative learning: Group discussion Problem-Based learning and Hands-on activities Self-study and E-learning |
| | | Make up Class | |
| 16 | 5-9 Oct 09 | Final Examination and Project-work Assignment submission | |

Venue: Room 2122 and Computer lab (Ground Floor Sri-Juthapa Learning Center)

Expected Students 'Learning Outcomes:

1. Knowledge

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| <i>Students will have an in-depth knowledge in business statistics and the ability to apply that knowledge in practice.</i> | • Apply technical and information skills appropriate to their discipline or professional area; |
| | • Understand the limitation of, and have the capacity to evaluate, their current knowledge; |
| | • Learn both independently and cooperatively; |
| | • Learn new skills and apply learning to new and unexpected situations. |

2. Communication Skills and Social Skills

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| <i>Students will be able to communicate effectively across a range of context and possess social skills</i> | <ul style="list-style-type: none">• Demonstrate oral, written, numerical and graphic communication;• Social skills: helping, trust building, conflict-management decision-making, leadership, ...• Present well-reasoned arguments using software and technology as appropriate;• Access, organize and present information, particularly through project assignment |
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3. Thinking Skills and Problem Solving

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| <i>Students will be effective problem-solvers, capable of applying logical, critical and creative thinking to a range of problems. They will have developed competencies in numeracy and information literacy</i> | <ul style="list-style-type: none">• Conceptualize problems and formulate a range of solutions;• Team work and work effectively with others;• Find, acquire, evaluate, manage and use relevant information in a range of media. |
|---|--|

Teaching Methods

1. Teaching Sessions:

- **Lectures**

There will be 13 two-hour lecture sessions in this course. Lectures will cover the core examinable material in the unit. The lectures will present only a part of the unit's content for that week, students have to attend lecture sessions and to have read the week's material in the text before attending the lecture.

- **Student Centered: Cooperative learning and Problem-Based Learning approaches**

Students are required to attend a Small group work and Tutorial sessions. These will be held weekly. Small group work and Tutorial sessions will consist primarily of guided problem solving and are intended to reinforce and extend material covered in lectures.

To benefit most you should prepare rough answers and come prepared to discuss/ask your group members to explain parts of the subject that you have not fully understood.

Tutorial session may also be used to provide students with an overview of assignment and mini assignment questions.

2. Assignments

1. Mini assignments
2. Midi assignment
3. Project Assignment

3. Assessment

- | | |
|---|------|
| 1. Attendance, Ethics and Personality | 10% |
| 2. Assignments | 40 % |
| o Mini Assignments and Activities (10%) | |
| o Midi Assignments (10%) | |
| o Project Assignments (20%) | |
| 3. Midterm Test | 20% |
| 4. Final Examination | 30% |

Assessment details

| Mini-Assignments | |
|---------------------------|--|
| <i>Date</i> | Mini-Assignment 1: 10 July 09, (End of week 4), by 4.00pm Mini-Assignment 2: 7 Aug 09 (End of week 8), by 4.00pm Mini-Assignment 3: 4 September 09 (End of week 12), by 4.00pm |
| <i>Task length</i> | Ten to fourteen short questions. |
| <i>Content</i> | <p>These will be individualized each student will have a unique set of problems and done by students in their own time. They will generally comprise quite simple questions, and only the answers will be marked. The aim of mini-assignments is to:</p> <ul style="list-style-type: none"> • test and reinforce acquisition of core computational skills relating to key formulae in each module of the unit. • provide rapid feedback with regard to these core computational skills, • encourage students to check their answers • encourage students to read and understand instructions • require students to practice reporting in a specified format • provide a practically limitless set of practice problems for core computational skills. <p>Their individualised nature is designed to avoid student co-operation in assignment preparation. It is critical that students carefully read the instructions included in mini-assignments. If for any reason a student does not understand an instruction they should check with the lecturer. Failure to follow instructions may result in the loss of marks.</p> |
| <i>Format</i> | Student writes answers on printed individualised Excel worksheet. A COVER SHEET IS NOT REQUIRED |

| Midi-Assignment and Project Assignment | |
|---|---|
| Date | 3 October 09 (End of week 16), by 4.00pm |
| Task length | Midi-Assignment: Six to ten multipart questions. Project Assignment: One topic |
| Content | The assignment will consist of preparing answers to a variety of problems, with workings and procedures shown, and for which part marks may be awarded for incorrect answers. It is recommended that students work on the assignments in teams of two or three. |
| Format | Students may submit either a hand written or word processed assignment. Only one assignment should be submitted per team. Students should keep a photocopy for study purposes. Students should answer in sufficient detail to allow the marker to follow the logic of their answers. Typically this would be a similar level of detail to the worked examples appearing in the lecture notes. A SIGNED COVER SHEET IS REQUIRED. |

4. Plagiarism

Please read the following statement on plagiarism.

Statement on Plagiarism and Academic Integrity

Plagiarism is a form of cheating. It is taking and using someone else's thoughts, writings or inventions and representing them as your own, for example:

- using an author's words without putting them in quotation marks and citing the source;
- using an author's ideas without proper acknowledgment and citation; or
- copying another student's work.

If you have any doubts about how to refer to the work of others in your assignments, please consult your lecturer for relevant referencing guidelines, and the academic integrity resources.

The intentional copying of someone else's work as one's own is a serious offence punishable by penalties that may range from a fine or deduction/cancellation of marks and, in the most serious of cases, to exclusion from a unit, a course or the University. Details of penalties that can be imposed are available in the Student Discipline –Academic Misconduct.

5. Mobile Phone Policy

Students' answering their mobile phone is disruptive and all these steps are designed to reduce the cost imposed on all.

- 1 Students should normally turn off their mobile phones while in lectures, computer lab and library.
- 2 In case of special circumstances, such as sick, student phones may only be left on in class if in "silent mode".
- 3 In test situations mobile phones should be kept out of student hands and preferably in the student's bag.

Grading Criteria:

The Grade Report Criteria

| Student' score % | Grade | Result/Remark |
|------------------|----------------|---------------|
| 86.00-100 | A | 4.00 |
| 82.00-85.00 | A ⁻ | 3.75 |
| 78.00-81.00 | B ⁺ | 3.50 |
| 74.00-77.00 | B | 3.00 |
| 70.00-73.00 | B ⁻ | 2.75 |
| 66.00-69.00 | C ⁺ | 2.50 |
| 62.00-65.00 | C | 2.00 |
| 58.00-61.00 | C ⁻ | 1.75 |
| 54.00-57.00 | D ⁺ | 1.50 |
| 50.00-53.00 | D | 1.00 |
| 46.00-49.00 | D ⁻ | 0.75 |
| 0.00-45.00 | F | 0 |
| - | I | Incomplete |
| - | W | Withdraw |

For student who enroll with non - credit

| | | |
|--------------------------|---|---------|
| More than or equal to 50 | S | - |
| less than 49 | U | - |
| - | V | visitor |

Instructional Materials:

1. Lecture notes and Handout
2. Worksheets and Work cards
3. Power point presentation
4. Statistics Software Program: SPSS, Fathom, Excel and TinkerPlots

Resources & TextBook:

Aczel, A.D., Sounderpandian, J. (2006) *Complete Business Statistics* 6 Ed. Boston: McGraw Hill Inc.

Kohler, H. (2002) *Statistics for Business and Economics*. USA: Thomson Learning, Inc.

Newbold, P.Carson, W.L. & Thorne, B. (2007). *Statistics for Business and Economics* 6 Ed. NJ: Pearson Education, Inc.