

*- Course Information -*

<b>University:</b>	University of Nebraska at Omaha
<b>College:</b>	Information Science and Technology
<b>Curriculum:</b>	College of Information Science & Technology
<b>Number:</b>	2500
<b>Type:</b>	Lecture
<b>Title:</b>	Introduction to Applied Statistics for IS&T
<b>Short title:</b>	Intro to Applied Stats for IST
<b>Effective term:</b>	Summer 2013
<b>Graduate non-degree students:</b>	Allowed
<b>Can course be taken for credit multiple times?</b>	No

*- Credit Hours Information -*

<b>Type:</b>	Fixed
<b>Hours:</b>	3

*- Cross-listing and/or Dual-listing (UG/G) Information -*

<b>Courses:</b>	Not applicable
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*- Duplication Information (not to be used for cross/dual-listings) -*

<b>Curriculum:</b>	Not applicable
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*- 1.0 Course Description Information -*

## 1.1 Catalog description:

The course emphasizes the function of statistics in information science and technology including topics such as descriptive statistical measures, probability discrete probability, sampling, estimation analysis, hypothesis testing, regression, and analysis of variance. A well-known computer package will be used to support the problem-solving process.

## 1.2 Prerequisites of the course:

Math 2040 or Math 2030 or CSCI 2030.

## 1.3 Overview of content and purpose of the course:

The course emphasizes the function of statistics in information science and technology including the topics of descriptive statistical measures, graphical summarization and presentation, sampling, continuous probability distributions (uniform, normal, and exponential), interval estimation, hypothesis testing including Type I and Type II errors, simple- and multiple-regression, and analysis of variance. This course is intended to be foundational and allow the student to enter advanced analytical courses. The course will prepare students for work in data mining and business data analytics. A well-known computer package will be used to support the problem-solving process.

## 1.4 Unusual circumstances of the course:

None

*- 2.0 Course Justification Information -*

## 2.1 Anticipated audience / demand:

The course is primarily intended for College of Information Science and Technology (CIST) undergraduate and graduate students who need to satisfy foundation requirements.

Students from other colleges are not required to take this course.

2.2 Indicate how often this course will be offered and the anticipated enrollment:

Every semester, 25 students per section

2.3 If it is a significant change to an existing course please explain why it is needed:

- 3.0 *Objective Information* -

Is this course part of or being proposed for the General Education curriculum?

No

3.1 List of performance objectives stated as student learning outcomes:

The broad objective of this course is to enable you to gain an overview of the functions of statistics in modern business. This course will facilitate your understanding of the concepts and your development of the skills needed to apply statistics to the business decision-making process. This course will also enable you to extend your understanding and use of computer-based statistical tools and provide opportunities to use them to analyze business problems.

3.2 General Education Student Learning Outcomes

After completing the course, successful students shall be able to do the following:

- 4.0 *Content and Organization Information* -

4.1 List the major topics central to this course:

**Data and Statistics**

**Descriptive Statistics I: Tabular and Graphical Methods**

**Descriptive Statistics II: Numerical Methods**

**Continuous Probability Distributions**

**Sampling and Sampling Distributions**

**Interval Estimation**

**Hypothesis Testing**

**Statistical Inference about Means with Two Populations**

**Analysis of Variance**

**Regression Analysis**

**Interpretation of Statistics for Technology Professionals**

- 5.0 *Teaching Methodology Information* -

5.1 Methods:

The course uses a combination of approaches including lecturing, problem solving, contemporary project using a statistical packages (MINITAB and Excel), and exams

5.2 Student role:

The student will attend lectures, participate in discussion on assigned readings, complete assigned projects, and complete required examinations

- 6.0 *Evaluation Information* -

Students should be provided the actual list of projects, basis for determining the final grade, and grading scale at the beginning of each course.

6.1.1 Describe the typical types of student projects that will be the basis for evaluating student performance:

- Class attendance and participation
- Three to four problem-solving projects using a statistical package
- Three examinations with combination of problem solving and multiple-choice questions about the concepts discussed in the class.

Component	Grading
Class attendance and participation	10%
Examinations	60%
Projects	30%

6.2 Describe the typical basis for determining the final grade (e.g., weighting of various student projects):

The final grade is based on the percentage of points that the student receives out of the total possible points for the course. The guaranteed grade scale is shown in the following table. A curve may be used to scale the entire class higher, if necessary, but scaling down will not be done.

6.3 Grading type:

Letter grades

- 7.0 Resource Material Information -

7.1 Textbook(s) or other required readings used in course:

Anderson, D., Sweeney, D., & Williams, T. (2012). *Essentials of Modern Business Statistics*, 5th ed. Mason, OH: South-Western Publishing.

7.2 Other student suggested reading materials:

Brightman, H. (1986). *Statistics in Plain English*. Cincinnati, OH: South-Western Publishing Company.

7.3 Current bibliography and other resources:

ahmetrics. (2012). How read critical values from t distribution (t table). Retrieved September 16, 2013, from <http://www.youtube.com/watch?v=Dy9UCaqBZd8>.

Conover, W. (1999). *Practical Nonparametric Statistics*, 3rd ed. New York: John Wiley & Sons.

Dinov, I. (2002). F Distribution Tables. Retrieved August 6, 2013, from [http://www.socr.ucla.edu/applets.dir/f\\_table.html](http://www.socr.ucla.edu/applets.dir/f_table.html).

Jensen, M. (2013). How to use the Standard Normal Distribution Table. Retrieved October 12, 2013, from <http://www.youtube.com/watch?v=Fevu674sLOA>.

Kraemer, H. & Thieman, S. (1987). *How Many Subjects?* Newbury Park, CA: Sage Publications.

Krishnamoorthy, K. (2006). *Handbook of Statistical Distributions with Applications*. Boca Raton, FL: Chapman & Hall/CRC Press.

Montgomery, D., Peck, E. & Vining, G. (2001). *Introduction to Linear Regression Analysis*, 3rd ed. New York: John Wiley & Sons.

Pelosi, S. (2000). *Doing Statistics for Business*, 2nd ed. New York: John Wiley & Sons.

Provost, F. & Fawcett, T. (2013). *Data Science for Business: What you need to know about data mining and data-analytic thinking*. Sebastopol, CA: O'Reilly Media.

Vickers, A. (2009) What is a p-value anyway? 34 Stories to Help You Actually Understand Statistics. Upper Saddle River, NJ: Pearson.

- 8.0 Other Information -

8.1 Accommodations statement:

Accommodations are provided for students who are registered with UNO Disability Services and make their requests sufficiently in advance. For more information, contact Disability Services (MBSB 111, Phone: 402.554.2872, TTY: 402.554.3799) or visit the web at <http://www.unomaha.edu/disability>.

8.2 Other:

\* 8.3 Author(s):

Dr. Najjar, Dr. Haworth, Sue Troester