

## STAT 150 – Introduction to the Discipline of Statistics

### 1. Catalog Description

#### STAT 150 Introduction to the Discipline of Statistics (2)

Orientation to the statistics program, introduction to the discipline of statistics, including the development of the discipline, professional ethics, data visualization and the role of statistics in the scientific enterprise. 2 lectures. Prerequisite: Freshman Statistics major, or permission of instructor.

### 2. Required Background and/or Experience

None.

### 3. Expected Outcomes

The student should be able to:

- a. appreciate the role of statistics in the scientific enterprise and discuss the development of statistics as a scientific discipline.
- b. pose questions about collected data and use data visualizations to answer such questions.
- c. assess and critique others' data visualizations.
- d. assess and critique the ethicalness of statistical studies.

### 4. Text and References

Salsburg, D. *The Lady Tasting Tea: How Statistics Revolutionized Science in the Twentieth Century*, W.H. Freeman, 2001.

Wainer, H. "How to Display Data Badly." *The American Statistician*, Vol. 38 No. 2, 1984.

### 5. Minimum Student Materials

Access to the internet; access to R, JMP, Minitab or comparable statistical software.

### 6. Minimum University Facilities

Computer lab or studio classroom required.

7. **Expanded Description of Content and Method**

Topic	No. of lectures
<b>I. Data visualization and description</b>	<b>8</b>
Use of Gapminder, JMP, and/or other windows-based software to create data visualizations to answer (descriptive) research questions about data sets. Introduction to R data basics, culminating with a project in R.	
<b>II. Ethics</b>	<b>3</b>
Discussion of ethical guidelines for statistician and research studies, including but not limited to the ASA Guidelines.	
<b>III. History of statistics</b>	<b>3</b>
Important developments in statistical science, with an emphasis on the people involved (à la <i>The Lady Tasting Tea</i> ).	
<b>IV. Orientation</b>	<b>4</b>
Presentations from Career Services, Health & Counseling Services, major advisors (curriculum and registration), and minor advisors.	
<b>Total</b>	<b>18</b>

8. **Method of Evaluating Outcome**

Students' learning in this course will be assessed by:

- a. quizzes and exams.
- b. homework assignments.
- c. class participation and discussion.
- d. a course project.