Introduction to Probability and Statistics

MA171 Winter 2014

Professor: Dr. Olga Hocking
Office: NSF 1009
Email: opendlet@nmu.edu
Office Hours*: M,T,W,R 9:00am-1:00pm
*appointments must be made via e-mail in advance; other hours available

Text: Moore, McCabe, Craig. Exploring the Practice of Statistics. Loose-leaf version available packaged with code for access to on-line system. To purchase electronic version go to: http://courses.bfwpub.com/eps. Electronic access to this website IS REQUIRED.

Course description: Statistics is the language of numbers. In this class you will learn how to interpret numerical data and make inferences for answering research questions. The laws of probability are what make this possible. Methods for the analysis and interpretation of research data will be presented in a logical, practical sequence of steps that will lead to conclusions based on research data. Statistics is used in all fields in some form or another - even in our day-to-day living. An understanding of basic statistical concepts is essential for making judgments and predictions. Even the reading of the daily newspaper involves a degree of understanding of these basic statistical concepts in order to form rational and logical opinions. Emphasis in this class is on application of these methods with supporting theoretical concepts presented as needed.

Learning Objectives: Upon completion of this course, students will be able to:
- understand the difference between descriptive statistics and inferential statistics
- determine sample spaces and find the probability of an event
- summarize a set of data numerically and graphically
- formulate and test hypotheses about parameters for both one and two populations for both population means and proportions
- construct and interpret confidence interval estimates for population parameters
Evaluation of these learning outcomes will be done through homework assignments, quizzes and exams.

Course Requirements:

Students will complete five online exams. An online practice test will be given and reviewed in class prior to each test. Homework will be assigned intermittently and may or may not be collected or reviewed. The text book code allowing online access to the course material and tests via stats portal is required.
Grades:

Homework : 10%
Five interim Tests: 60%
Final Exam: 30%

Scale:

A ≥ 94%    A- 90% - 93%    B+ 87% - 89%    B 84% - 86%    B- 80% - 83%
C+ 77% - 79%    C 74% - 79%    C- 70% - 73%    D+ 67% - 69%    D 74% - 76%
D- 60% - 63%    F < 60%

Schedule:

Expect to spend an average of 15 hours per chapter. A few things to consider –

- Some chapters are easier than others and will take less time. Expect to spend more than 15 hours on some of the harder chapters.
- This course starts out slow and picks up rapidly. The easier chapters and tests are the earlier ones so do not become complacent if you score well in the beginning. The practice tests are designed to identify the areas of concern. Use these wisely and make an appointment for private consultation before the test if you need extra assistance with a particular area. There is a math help lab available (check with the math department main office (NSF 1000) for the location and times). These are conducted by students who have usually had this class and can offer assistance.

Attendance: Attendance in lecture classes is not mandatory. Attendance will be taken sporadically primarily so I can get to know you individually. However, you are responsible for any material or announcements (i.e. test dates, assignment due dates, etc.) made in class. Therefore, except for test days, no absentee excuses are necessary.

Homework policy: Homework will be evaluated as attempted (1) or not (0) and will be used in assessing the final grade by no more than 10%. This generally serves as a factor in determining borderline grades. If you feel you may need the homework to help your grade you should try to submit all collected assignments. There will be an opportunity before each class period to ask questions about the homework or lecture material. Late homework is always accepted at any time during the semester.
**Make-up exam policy:** Exams can be taken during either of the two MA171 sections which I teach. These classes are held M,T,W,R 3:00-3:50 or 4:00-4:50 in West 3805. Students are also encouraged to attend either lecture period as the two sections will be covering identical material. Seating priority will be given to those enrolled in that particular section.

Make-up exams will only be allowed with permission of the instructor for valid health issues or approved extenuating circumstances. If permission is granted, the exams MUST be made-up within ONE-WEEK of the original test date.

**Communication:** Communication will be via my NMU email address: opendlet@nmu.edu. All emails will be answered within 48 hrs. Grades will be communicated via educat. No other forms of electronic communication (i.e. educat email or stats portal) will be acknowledged.

Disability Services

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

This course satisfies the Formal Communication Studies requirement.

This course is designed to introduce students to the ways in which information and ideas are expressed using a communication system other than English. Such courses should foster the student’s ability to conceptualize and communicate in an orderly, rational manner. Characteristics of a communication system include: 1) possession of a grammar; 2) operation from an established set of rules; 3) reasoning properties such as deduction, inference drawing and problem solving. This includes courses in languages and those in which the central focus of the course is on statistics, computers or formal logic.

*This syllabus is subject to change with notice.*
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<th>Chapter</th>
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<td>HW 1</td>
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<td>Test 1</td>
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<td>3.2, Practice test, Test 2</td>
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<td>Test 2</td>
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<td>Spring Break</td>
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<td>7.1,8.1</td>
<td>One sample mean inference</td>
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<td>Review tests</td>
<td>Inclusive, all topics</td>
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<td>4/21</td>
<td>Practice final</td>
<td>Inclusive, all topics</td>
<td>Final Exam</td>
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3 pm class 4/29 2 pm
4 pm class 4/30 4 pm