

**Class meetings:** M, W, F 2:20 to 3:30 p.m. in PPHAC 232

**Instructor:** Dr. Kay Somers

**Office:** PPHAC 220

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**Office Hours:** Monday, Wednesday, Thursday, and Friday—11:00 to 11:50 a.m. and by appointment.

**Required text:**

Roxy Peck, Chris Olsen, and Jay Devore, *Introduction to Statistics and Data Analysis*, Second Edition, Duxbury, Pacific Grove, CA, 2005.

**Course Goals:** After completing this course, successful students will:

- have an understanding of how data is collected and gain experience collecting and finding data sets.
- be able to effectively summarize data using graphical displays, and interpret data and draw conclusions based on graphical displays of data.
- understand that the purpose of collecting and analyzing data is to answer questions and make informed decisions.
- understand the role of probability and uncertainty in data analysis.
- be able to explain clearly, both orally and in writing, how the results of statistical analyses relate to the context from which they were obtained.
- learn to think critically about data and the results of data analyses that occur in their everyday lives.
- be able to use technology appropriately as a tool for quantitative analysis.

**Course topics:** An understanding of how we collect, present, analyze and interpret data is a critical part of everyday life and of many very important decisions that affect all of us. This course will explore the procedures used in the collection, presentation, analysis, and interpretation of data, how to carry out those procedures well and how to recognize when they are done poorly. The topics covered include graphical representations of data, measures of central location and variation, normal distributions, regression and correlation, sampling and design of experiments, probability, random variables, discrete probability distributions, parameter estimation, confidence intervals, and inference and tests of hypothesis. These topics are found in Chapters 1 through 10 of the class text. (Note that some sections in some of these chapters will not be covered.)

**Homework—Preparing for each class:** During each class, I will assign material from your textbook for you to read for the next class. I expect that you will have read and carefully thought about the assigned section(s) before coming to class. In addition, I will assign homework problems so that you can practice working with the material we have discussed in class. These homework problems will usually be reviewed during the next class. The homework will involve a variety of types of activities, including some writing assignments and one project. Some of these homework assignments may be collected and graded. In all homework assignments that are to be graded, you will be told in advance that the work will be collected. Students are encouraged to study and work together on **ungraded** assignments

but graded assignments need to be **your individual** work unless it is specifically stated in writing that the assignment is a group assignment. Late homework will be accepted only if you are absent due to illness or emergency.

**Calculators and Technology:** You will need to have a calculator to use for this class, and will be expected to bring it with you to each class. (You may also use it on all quizzes and tests.) I **strongly** recommend you obtain a TI-83 graphics calculator to use. I will provide instructions for using the TI-83 and will use it for classroom demonstrations. We will also have the option to use the computer program *Excel* for some activities.

**Attendance, participation, and organization:** Attendance in class is required. During many classes I will pose short questions for you to answer and will keep track of your responses. Most will be based on the assigned reading, the previous lecture or on the homework. In addition, some of the statistical concepts will be demonstrated through class activities done in small groups during class. In order to participate, you must be in class. *Warning: This course will involve an interactive classroom, with significant participation expected on your part.*

You are also responsible for obtaining all class handouts and keeping them organized. A three-ring binder for the course, with sections for class notes, handouts, quizzes and tests will be very helpful. Students should inform the instructor of any unavoidable absence in advance, if possible. Make-up exams will be given only in the case of a documented illness.

**Classroom etiquette:** You need to come to class prepared. This means that you have carefully read the assigned material, you have worked (seriously) on the assigned problems and you have your notebook, your textbook, and your calculator with you. You are ready to ask and answer questions in class and to work with your classmates on any in-class group activities. This classroom needs to be a place where everyone feels comfortable asking and answering questions; you are expected to treat everyone in class with respect. You need to turn off your cell phone and any other electronic devices (except calculators, of course) and put them away during class. Finally, you are expected to be on time for class, to stay until class is over and not leave the class unless there is an emergency. (It is very disruptive to everyone, but especially to your instructor, to have people walking in and out of the classroom.)

**Extra help:** You are strongly encouraged to ask questions in class and to see Dr. Somers or the mathematics tutors for help outside of class as much as necessary. You will be informed soon about tutor center hours.

**Grading:** In addition to homework, one project, and daily in-class questions, there will be regular announced quizzes, three hour exams, and a mandatory, cumulative final exam. Your course grade will be computed as follows:

Project	10% of your grade
Quizzes, daily questions, graded homework and class participation	25% of your grade
three hour exams	45% of your grade
cumulative final exam	20% of your grade.

The project will be due during the last half of March, with the exact date to be announced. The three hour exams are tentatively scheduled for the dates given below. You are responsible for knowing about the project due date and any changes to the test dates made during class.

Friday, February 9

Friday, March 16

Wednesday, April 18

**Academic Honesty:** For graded homework assignments and projects, you may use your class notes and any books or library sources, except a solutions manual. You may not use the help, orally or in written form, of any individual other than your instructor unless it is specifically a group assignment and you may not copy someone else's work or let someone else copy your work. If an assignment is completed by a group of two or more people, each person who contributed to the work must put his or her name on the work. All in-class daily problems, quizzes and tests are to be done by you individually unless specifically stated by your instructor for a particular event.

The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. The *Academic Honesty Policy Guidelines* specific to mathematics classes are reiterated at the end of this syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully. If you are unsure about the propriety of a particular procedure or approach, please consult with your instructor before continuing with the assignment.

**Special Accommodations:** Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Learning Services Office as soon as possible to enhance the likelihood that such accommodations are implemented in a timely fashion.

## ACADEMIC HONESTY POLICY GUIDELINES

### MATHEMATICS COURSES

The Department of Mathematics and Computer Science supports and is governed by the *Academic Honesty Policy of Moravian College* as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the *Academic Honesty Policy of Moravian College*. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution of all assigned problems, both graded and ungraded.

All in-class or take-home tests and quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by your instructor for a particular test.