MATH 201

ELEMENTS of STATISTICS and PROBABILITY

Tuesday and Thursday 6:00 to 8:25 PM in E106 5 UNITS

Instructor Wynn Walker

Internet

- **Email:** wlwalker326@gmail.com
- **Moodle Homework, Quizzes, and Resources:** http://cccmoodle.org/
- **Lecture Notes:** http://www.ltcconline.net/greenl/courses/201/201.htm
- **Video Examples:** http://www.ltcconline.net/greenl/courses/201/CamtasiaStatCrunch/index.htm
- **Interactive Applets:** http://www.ltcconline.net/greenl/java/index.html#Statistics

Textbook: Instead of a traditional textbook, this class will use an interactive multimedia online learning system. Printed versions are for sale in the college bookstore.

Course Description This course will cover data analysis including probability, distributions, sampling, hypothesis testing, confidence intervals, regression analysis, and nonparametric analysis.

Student Learning Outcomes

1. Design and implement an unbiased study that will produce sound statistical results.
2. Generate and interpret statistics graphs from data that arise from surveys and experiments.
3. Implement the rules of probability.
4. Apply confidence intervals and test hypotheses to make conclusions about data that come from practical applications.
5. Perform regression analysis to make informed predictions about relationships between quantitative variables.

Prerequisite A grade of C or better in Math 154A or an equivalent class, or a satisfactory score on the assessment test.

Grading Policy Your letter grade will be based on your percentage of possible points.

A 90 -- 100% C 70 -- 79%

B 80 -- 89% D 60 -- 69%

Quizzes (Online): .....50 points

Homework (Online):……. 150 points

Weekly Quizzes (In Class): .....100 points

Exam 1: May 8 .....150 points

Exam II: June 10 .....150 points

Project 1: May 1 ..... 100 points

Project 2: June 12 ..... 100 points

Final Exam: June 24..... 200 points

Exam Policy Students are to bring calculators, pencils or pens, and paper to each in class exam. A single 3"x5" note card may also be used. The note card can have writing on both sides. Grading will based on the progress towards the final answer, and the demonstration of understanding of the concept that is being tested, therefore, work must be shown in detail. There are no makeups for midterms. With a valid proven medical excuse, the missed midterm will not be counted toward the grade. The final exam cannot be taken late.

Homework and Quiz Policy Homework and Computer Quizzes are delivered and taken online via the Moodle. It is strongly recommended that you keep a journal of the written responses to the homework and quiz questions. This will help you prepare for the projects, midterm and final exam. Homework **are Quizzes are due at 11:55 PM on Sundays, but it is required that you work on your homework and quiz before the quiz so that you can ask your instructor questions during class and succeed on the in class quizzes.** Those who have attempted the homework and quiz for the week and have received at least 50% on each will be allowed to bring in a 3x5 note card to the in class quiz. Time extensions will not be given, but students will be able to work on "late" assignments for no credit but plenty of learning. Homework and quizzes can be taken repeatedly before the due date and only the highest score will be counted towards your grade.

Projects Two projects will be created for this class. For Project 1, students will collect quantitative data and use a computer to display each of the charts discussed in class. For Project 2, students will conduct a survey and construct a confidence interval and perform a hypothesis test. Each project will include the results and a narrative describing data collection, assumptions made, background information, how the data was analyzed, and conclusions. Unless specifically stated, all results must be computed using a computer and the computer generated results must be included with the project. The projects should be typed, double spaced, and have 12 point font.

Students are to work in pairs or trios. A 15% penalty will be incurred on any student who cannot work with another student. Rubric for the Project Grades. I will be happy to look at a rough draft of your paper if you can bring or email it to me at least 24 hours before it is due. After receiving feedback, you can ask more questions, but only one rough draft of the paper will be reviewed by me.

Office Hours:

Monday ..... 2:00-3:00 MSC
Tuesday..... 4:30-5:30 MSC
Wednesday ..... 2:00-3:00 MSC
Thursday..... 4:30-5:30 MSC

CALCULATORS: The TI 83, TI 84+ is required for this course. There are a limited number of TI 84+ calculators available for rent for $5 at the Library. A TI 89 will also work for this course, but you will need to download the TI 84+ App to make it workable.

LEARNING DISABILITIES: If you have a learning disability, be sure to discuss your special needs with me. Learning disabilities will be accommodated and you may contact our disability resource center by email or by phone at (530) 541-4660 x 384.

TUTORING: Tutors are available at no cost in A 201 (The Math Success Center).

CELL PHONES: Cell phones must be turned off while class is in session. A 5% penalty will be given to any student whose cell phone goes off during a quiz or exam.

A WORD ON HONESTY: Cheating or copying will not be tolerated. People who cheat dilute the honest effort of the rest of us. If you cheat on a quiz, exam, or project you will receive an F for the course, not merely for the test. Other college disciplinary action including expulsion might occur. Please don't cheat in this class. If you are having difficulty with the course, please contact me.

LECTURE AND EXAM SCHEDULE (PLEASE NOTE: THIS SCHEDULE IS TENTATIVE AND VERY LIKELY WILL CHANGE)

Week 1 *Chapter 1: Sampling Data , Chapter 2: Descriptive Statistics*

Apr 8: Introductions, start Chapter 1

Apr 10: Finish Chapter 1, Start Chapter 2

Week 2 *Chapter 2: Descriptive Statistics*

Apr 15: **Quiz on Chapter 1**, Finish Chapter 2

Apr 17: Discuss Project 1, Start Chapter 3

Week 3 *Chapter 3:Probability,Chapter 4:Discrete Random Variables, Project1*

Apr 22: **Quiz on Chapter 2**, Finish Chapter 3

Apr 24: Chapter 4

Week 4 *Chapter 5:Continuous Random Variables, Chapter 6: The Normal Distribution*

Apr 29: **Quiz on Chapter 3 and 4**, start Chapter 5

May 1: Finish Chapter 5; start Chapter 6, **Project 1 Due**

Week 5 , *Chapter 6: The Normal Distribution, Exam 1*

May 6: Finish Chapter 6, Review for Exam 1

May 8: **Exam 1** (Chapters 1-5)

Week 6 *Chapter 7: The Central Limit Theorem, Chapter 8: Confidence Intervals*

May 13: Chapter 7

May 15: Finish Chapter 7, start Chapter 8

Week 7 *Chapter 8 (continued), Chapter 9: Hypothesis Testing: 1 Sample*

May 20: **Quiz on Chapters 6 and 7**, finish Chapter 8,

May 22: Start Chapter 9

Week 8 *Chapter 10: Hypothesis Testing: 2 Samples*

May 27: Finish Chapter 9

May 29: Chapter 10, Project 2 Discussion

Week 9 *Chapter 11: Chi-Square Tests, Project 2*

Jun 3: Chapter 11

Jun 5: **Quiz on Chapter 9 and 10**
Link to Test for Homogeneity

Week 10 *Chapter 12: Linear Regression and Correlation,*

Jun 10: Chapter 12, Review for Exam II

Jun 12: **Exam II**: (Chapters 6-10)

Week 11 *Chapter 13: F Distribution and ANOVA, Exam 3*

Jun 17: More on Chapter 12, Chapter 13, **Project 2 Due**

Jun 19: Chapter 13; Review for Final Exam

Week 12

Jun 24: (6:00 – 7:50PM): Final Exam (Comprehensive)

HOW TO SUCCEED IN A MATH CLASS

- Get to class early, get yourself settled, spend a few minutes looking at your notes from the previous class meeting, and have your materials ready when class starts.
- Read each section before it is discussed in class.
- Do some math every day.
- Spend about half of your study time working with your classmates.
- Start preparing for the exams at least a week in advance.
- Submit your homework and quizzes at least 24 hours before it is due. Computer problems always seem to occur at the worst times.
- Come to the Math Success Center.
- Get help from a tutor or from your instructor whenever you are confused. Your instructor is there