*Concordia University Mission
Concordia University is a Lutheran higher education community committed to helping students develop in mind, body, and spirit for service to Christ in the Church and in the world.

*Program/Department Mission
The Mathematics Department at Concordia University Wisconsin primary goal is to build competencies in the understanding, communication, and application of mathematics. Concordia math students will gain an appreciation of mathematics as an appropriate discipline to investigate God's universe as they analyze mathematical structures and apply mathematical problem-solving strategies to a variety of real-world problems.

*Course Description: MATH 205 STATISTICS I studies the basic methods of sampling and interpreting data, probability, the normal distribution, correlation, hypothesis testing and confidence intervals.

*Credit Hours: *3*

Instructor: Dennis Evans, Ph.D.
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Office Hours: MWF 8-9, 11-12, 2-3 CT; TTh 2-3 CT

Please feel free to take advantage of my office hours if you have any questions about course material at any time during the semester. Moreover, if you need to meet with me and cannot do so during regular office hours then just talk to me before or after class or contact me by phone or e-mail and we can schedule some other time to work together.

Course Location: *Rincker 016*

Course Meeting Days and Times: *TTh 8:05-9:20 am*

Instructor-student interaction and student preparation time: This course is a 3 hour course which meets three times per week (fulfilling the 3 credit hours during classtime). Class is supplemented with on-line resources in Blackboard. In addition, homework will be assessed outside of class using Blackboard quizzes. In general, it is expected that students spend 6 hours per week outside of class studying material and working on statistical problems.

*Course Prerequisites: Three years of high school college preparatory mathematics or MATH 121.

Required Resources*: Introductory Statistics by Neil A Weiss, 10th Edition, Pearson, 2016 US Edition
ISBN: 13: 978-0-321-98917-8
(if you purchase the e-book, be sure to only purchase from the bookstore or Pearson directly to make
sure you have a correct copy). Please purchase by the first week of class. There is a copy on reserve in
the library that you may use on campus and until you get your own copy.
We will be covering Chapters 1-9 and Chapter 12.*

Required Calculator: *Texas Instruments TI-83 or TI-84 graphing calculator*

Teaching Strategies:

Teaching strategies include lecture and discussion during class time. Students should come prepared for
class having read the book material ahead of time. Students should be prepared to actively participate
and learn during class time.

- o EXAMS: As this is a mathematics course, mastery of content is established by exam grades.
  There will be three formative exams AND one final summative exam. You will be allowed to use
  one page (front and back) of self-created notes for each exam.

- o HOMEWORK: You will need to complete a lot of homework prior to each class in order for you
  to understand and learn the material. There is no possible way to cover all relevant material in
  depth during class time; thus, a large amount of your learning will be in completing problems
  independently. Please see the end of the syllabus for details about homework exercises. I
  expect you to master these problems checking your work with the answers in the back – if you
  need help, please come see me or visit the Math Drop in Desk. **Homework will be assessed via
  Blackboard**. Late homework will not be graded. It is in your best interest to continually do
  homework as we move through the course rather than doing all sections that are due the night
  before the deadline.

Course Evaluation and Grading
20%   Participation
10%   Exam 1
10%   Exam 2
10%   Exam 3
20%   Final Exam
30%   Homework

Grading Scale
93% - 100%   A
90% - 92%   A-

87% - 89%   B+
83% - 86%   B
80% - 82%   B-
75% - 79%   C+
65% - 74%   C
60% - 64%   C-
50% - 59%   D
Below 50%   F

Course and Instructor Policies: Concordia University Wisconsin is a Lutheran higher education community committed to helping students in mind, body, and spirit for service to Christ and the world. As good stewards of your resources of time, talent, and treasures, you will desire to use everything wisely. Plan your time to allow for proper sleep, study, and recreation. Use all of your God given gifts in each class, developing latent talents and building on your strengths. You (or someone!) have paid good money to be part of the student body. Don't waste that investment.

If you find you are having difficulty, seek help immediately. See me in my office hours, or you can obtain help from the Math Drop in Desk within the Academic Resource Center (Luther Hall 200). I encourage you to work together to master the material.

It is important to your individual success and the success of the class as a whole that you attend regularly and participate fully in classroom discussions and activities. Therefore, I will take attendance and will administer the following policy:

> Your participation score will be based on your number of unexcused absences. If you have fewer 3 or fewer unexcused absences during the semester, you will receive a 4 (out of 4 points) for this score. If you have between 4 and 6 unexcused absences, you will receive a 3 for this score. Between 7 and 9 unexcused absences is a 2 for this score and between 10 and 12 unexcused absences is a 1 for this score.

Please note that I will count a late arrival or early departure as half an unexcused absence. These actions can be especially disruptive to the class.

Finally, if you are in a program that requires a minimum grade in this class, please note that I cannot allow that fact to affect your course grade. If this is the case, I would instead encourage you to make sure that you put in an average of 6 hours per week outside of class practicing the material, stop by my office anytime you have any questions and take advantage of the free tutoring available through the Academic Resource Center.

*Concordia University Policies:

* Disability Policy*:* In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Vocational Rehabilitation Act of 1973, individuals with disabilities are protected from discrimination and assured services and accommodations that provide equal access to the activities and programs of the university. Students with a documented disability who require accommodation in order to obtain equal access to this course should inform the instructor, and must also contact Disability Support Services:

- ➢ Mequon campus (262) 243-4299 or https://www.cuw.edu/departments/lrc/index.html
- ➢ Ann Arbor campus (734) 995-7552 or www.cuaa.edu/arc

*Recording policy: Students may record class sessions when recording is part of an accommodation specified by Disability Support Services. In all other circumstances, students must obtain the written permission of the course instructor prior to recording a class.

* Academic Integrity Policy: Concordia University expects all students to display honest, ethical behavior at all times and under all circumstances. Academic dishonesty is defined as follows:

Cheating: includes, but is not limited to: a) the use of unauthorized assistance in taking any type of test or completing any type of classroom assignment; b) assisting another student in cheating on a test or class assignment, including impersonation of another student.

Plagiarism: includes, but is not limited to: a) failure to give full and clear acknowledgement of the source of any idea that is not your own; b) handing in the same assignment for two different courses without the consent of the instructors.

Fabrication: the forgery, alteration, or misuse of any University academic document, record, or instrument of identification.

Academic Misconduct: intentionally or recklessly interfering with teaching, research, and/or other academic functions.

Sanctions: Faculty members who find evidence of academic dishonesty have sole discretion to determine the penalty, using their professional judgment. This can include a failing grade in the course, or removal of the student from the course. Additional sanctions will be imposed when a student is found to have violated the academic integrity policy more than once; these sanctions may include suspension or expulsion from the university.

*Title IX Policy: Concordia University is committed to fostering a safe, productive learning environment. University policy and federal law (Title IX) prohibit discrimination on the basis of sex which includes but is not limited to harassment, domestic and dating violence, sexual assault, and stalking. Sexual misconduct of any type is not permitted by the university. Please see the following link for more information about CU's policies and procedures concerning sexual misconduct: https://www.cuw.edu/about/offices/compliance/title-ix-sexual-harassment-policies/index.html

*Relationship to the Curriculum: This course addresses curriculum goals of quantitative numeracy through problem solving and numeracy. In this course students will demonstrate the ability to frame a problem and to develop solutions to it. Students will demonstrate ability to reason quantitatively.

*Connection to Concordia University Mission: Concordia University Wisconsin is committed to "developing the professional competencies and commitment required for responsible participation and leadership in a complex society." To achieve this goal, students pursuing a profession requiring quantitative literacy need this course as a firm foundation. This course provides students with their first look at a mathematical topic which dominates our society and multiple professions. This course is designed to enhance the statistical competency needed for future studies and vocations.

Mission Statement
Concordia University Wisconsin is a Lutheran higher education community committed to helping students develop in mind, body, and spirit for service to Christ in the Church and the world.

Global Ends
University graduates are well developed in mind, body, and spirit, fulfill their vocations, and serve Christ in the Church and the world. Consistent with a Liberal Arts education, our graduates demonstrate the following proficiencies:

1. Christian Faith
Our graduates are grounded in the Christian faith while also recognizing other major worldviews and how they differ from a Christian understanding of the world.

2. Service and Global Citizenship
Our graduates are globally-minded citizens.

3. Integrated Disciplinary Knowledge
Our graduates integrate insights from a wide range of disciplines.

4. Critical Thinking/Creative Problem Solving
Our graduates think rationally, critically, and creatively.

5. Communicative Fluency
Our graduates communicate effectively.

6. Analytical Fluency
Our graduates work with data effectively.

*Program/Department Student Learning Outcomes:
1. Demonstrate knowledge of mathematics, including algebra, geometry, probability, and analysis
2. Apply mathematical problem-solving strategies in a variety of real-world applications.

3. Demonstrate the ability to apply mathematical statistics to interpret information
4. Demonstrate the ability to prove and disprove conjectures
5. Communicate mathematical concepts in oral, symbolic, and written forms
6. Apply and appreciate mathematics as an appropriate paradigm in order to investigate God's creation

This course meets all mathematics program learning outcomes.

Course Objectives:
• To be able to analyze data using descriptive statistics
• To be able to understand the basic concepts of probability and probability distributions
• To be able to construct and interpret confidence intervals
• To be able to conduct a hypothesis test
• To understand the appropriate applications for statistical techniques
• To understand the difference between descriptive and inferential statistics
• To utilize the calculator/computer for the analysis of data
• To be able to interpret and present statistical results