

**Math 122**  
**Introduction to Statistics and Probability**  
Course Guide  
Spring 2016



Instructor: Dr. J.W. Snow  
Office: Jesse 215  
Phone: 643-7417  
email: John.Snow@cune.edu  
web: jwsnow.com  
Office Hours: MWF 10:00-11:00 and 12:30-1:30  
other times by appointment

**Catalog Description:** The fundamentals of elementary statistics, data collection and analysis, probability, distributions, sampling, hypothesis testing, correlation and regression.

**Textbook:** Notes are available on the course web page.

**Online Homework:** Most assignments for this class will be completed online through the course web page.

**Calculator:** You will need a calculator with capabilities similar to a TI-83/84. You will use this calculator on almost every homework, quiz, and test. A calculator with adequate capabilities is available on the course web page.

**Homework:** Daily online homework will be assigned over each topic we cover. This homework is for practice and can be worked and reworked as often as you like.

**Competencies:** Most of the grading in this class will be based on competencies. I have identified 16 areas in which anyone successful in this course should be competent. Every exam you take will focus on a handful of these competencies. Each competency will appear on a test in the form of a few questions. Each question will be assigned one of these grades:

M (Master)	correct
J (Journeyman)	correct except for a careless error which does not change the nature of the question
A (Apprentice)	incorrect

If you receive a grade of M on all of the questions on an exam or quiz related to a particular competency, then I will declare that you have demonstrated mastery of that competency. If you do not demonstrate mastery of a competency on one exam, then you will have the opportunity to attempt that competency again on a later exam. Your grade in this class will be determined by which competencies you have mastered. This is outlined below. This manner of grading has these benefits (among others): (1) It avoids the subjective nature of partial

credit. Your grade will reflect those topics which you have mastered. (2) It frees stronger students who have mastered material early from having to demonstrate that mastery repeatedly. (3) It allows students who may start off on the wrong foot to redeem themselves up until the last day of the semester.

The competencies on which you will be tested this semester are:

Competency Number	Competency Name	Lessons
1	Data	1
2	Sampling	2
3	Graphing Data	3
4	Summary Statistics	4, 5
5	Relative Standing	6
6	Probability	7
7	Random Variables	8
8	Discrete Distributions	9, 10
9	Uniform and Standard Normal Distributions	11, 12
10	Nonstandard Normal Distributions	13, 14
11	Confidence Intervals	15
12	Tests about Proportions	16, 18
13	Tests about Means I	17, 20
14	Tests about Means II	19, 24
15	Chi Squared Tests	22, 23
16	Linear Correlation	21

**Exams:** Five exams will be given in class on or around February 3, March 2, April 6, April 27, and May 4. The second, third, and fourth exams will be followed by competency days on which you can retest over any unmastered competencies. The last exam day is during final exam week. This will be a competency day.

**Grades:** Your grade will be determined by your homework average and by the number of competencies you have mastered. Passing grades will be distributed according to:

Number of Competencies	Homework 80-100	Homework 60-79
16	A	A-
15	B+	B
14	B	B-
13	B-	C+
12	C+	C
11	C	C-
10	C-	D+
9	D+	D
8	D	D-

**Additional Assignments:** Under some circumstances, additional assignments and quizzes may be necessary to facilitate communication and learning. When this happens, the additional grades will become part of the exam grade for the current chapter.

**Attendance:** You are expected to be in class on time every day. If you miss class for any reason, it is your responsibility to get the notes and assignments from that class meeting. A sign-up sheet will be passed around each class period to monitor attendance.

**Electronics:** Unless I have specifically asked you to use them, all electronic devices such as phones, tablets, laptops, earphones, etc. should be put away during class. Use of such devices in class for non-approved reasons is distracting and disrespectful to the class.

**Format of Answers:** This is a math class. Math relies on structure, discipline, and method. As such, unless I say otherwise, I expect to see complete work and exact answers. Your work should be neatly written so that the grader can easily follow it and find your answers. Attendance: You are expected to be in class on time every day. If you miss class for any reason, it is your responsibility to get the notes and assignments from that class meeting. A sign-up sheet will be passed around each class period to monitor attendance.

**Commitment:** You are a student; your job is to study. You will not succeed in this class without spending time studying and doing homework. For each hour in class, I expect you to spend two hours outside of class preparing (some will need to spend more time).

**Behavior:** It is assumed that at all times you will conduct yourself in a manner consistent with being a member of a Christian community.

**Work Samples:** Samples of student work are occasionally used (without names) for assessment purposes. If you do not want your work used in such a way, you should let me know.

**Course Workload:** In the face-to-face, online, and hybrid classrooms at Concordia University, Nebraska, credit hours are amassed in a course through student-to-instructor interaction, student-to-student interaction, Blackboard activities, contact with course-specific content, assignments, assigned videos, and other activities. No matter the length of the course meeting time in weeks or the amount of face-to-face instruction in the course, students can expect to devote at least 135 hours for each 3-credit course.

**Course Participation:** Federal Financial Aid regulations, which Concordia observes for all students, require that students regularly participate in courses in which they are enrolled. All students must log into the course management system (Blackboard) or participate in a face-to-face session weekly in order to avoid being tagged as a non-participant. Students must use the Concordia Blackboard and e-mail messaging systems to contact instructors and advisors. Students who are unable to participate regularly in their course for any reason should contact their instructor and their advisor. Students who intend to withdraw from a course or a program should notify their instructor and advisor.

**Academic Integrity:** At Concordia University Nebraska, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all of the work you do. Participating in a behavior that violates academic integrity (e.g., plagiarism, unauthorized collaboration, multiple submissions, cheating on examinations, or fabricating information) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment or examination, receiving a failing grade for the course, and/or being suspended from the university.

**ADA:** Students with a documented disability, who need reasonable accommodations, should contact ADA & Academic Support located in Link Library to arrange an appointment to discuss their individual needs. Students are also encouraged to notify their instructors immediately about any disability-related academic needs they may have. To contact the Academic Resource and Disability Support Services Coordinator, Bethany Landrey, please call 402.643.7187 or 800.535.5494 ext. 7187 or email [Bethany.Landrey@cune.edu](mailto:Bethany.Landrey@cune.edu).

**Emergency Information:** In inclement weather, check your e-mail, Blackboard, and the Concordia website ([www.cune.edu](http://www.cune.edu)) for information. Your instructor may utilize Blackboard to make-up course time, so please check Blackboard if a class is cancelled. In the event of an emergency while you are in a face-to-face class, follow the instructions of your instructor, ensure you are in a safe location, and, after you are in a safe location, check in with your instructor before leaving so that he or she can account for all students. Also, if you have not already done so, please update emergency contact information in “Banner Self-Service” on the connectCUNE portal (<http://connectCUNE.cune.edu>).

### **Learning Goals for General Education at Concordia:**

- **Faith:** to recognize that we are created by God, condemned by sin, redeemed by Christ, living out faith in our vocations.
- **Appreciation:** to value the whole of God’s creation and human experience.
- **Knowledge:** to gain a base level of knowledge in core disciplines.
- **Analysis:** to recognize, understand, critically evaluate and synthesize the components of a topic using methods appropriate to the discipline.
- **Application:** to employ learning creatively in a variety of settings and disciplines.
- **Communication:** to demonstrate effective communication skills for personal, academic and professional purposes.
- **Responsibility:** to grow in Christian stewardship, leadership, and professionalism.