Math 355 Spring 2019

Sections 5 (12 pm MTWR SCI A202) and 6 (1 pm MTWR SCI A202)

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Email: mmilkovi@uwsp.edu **Final Exam:** 5/13, 5 – 7 pm in D101

Office Hours: 2 pm – 2:50 pm, 4 pm – 5 pm MRWR (first 8 weeks), and 2 – 4 pm MWTR after Spring Break. In addition, I will typically be in my office for about half an hour before class each day.

Course Description: MATH 355. Elementary Statistical Methods. 4 cr. Fundamental concepts and techniques that underlie applications to various disciplines, including descriptive statistics; averages; dispersion; random sampling; binomial, normal, Student T, Chi-square, and F distributions; estimation and tests of hypothesis; linear regression and correlation; laboratory emphasis on sampling and applications. Does not count toward math major/minor, or major for teacher certification. **Prerequisite:** 100 or suitable placement test score. GDR: MATH BS BM/BFA

Required Text: <u>Introduction to the Practice of Statistics</u>, Eighth Edition by Moore, McCabe and Craig, published by W. H. Freeman and Company. ISBN: 978-1-4641-5893-3, available thru text rental.

Course Goals

Students are expected to understand statistical concepts. This understanding is to be demonstrated by doing assigned problems from the book, completing online homework, and exam performance, as well as by class discussion. We will cover most of chapters 1 – 9 in the text. Chapter 1 – Looking at Data – Distributions, Chapter 2 – Looking at Data – Relationships, Chapter 3 – Producing Data, Chapter 4 – Probability: The Study of Randomness, Chapter 5 – Sampling Distributions, Chapter 6 – Introduction to Inference, Chapter 7 – Inference for Distributions, Chapter 8 - Inference for Proportions, and Chapter 9 – Analysis of Two-Way Tables. Critical understanding of the concepts will be necessary. Thinking is required.

> *After completing this course, students will be able to: (1) Select, analyze and interpret appropriate numerical data used in everyday life in numerical and graphical format, (2) identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications, and (3) construct a conclusion using quantitative justification.*

Attendance will be taken almost every day. It is obviously to your advantage to be in class unless you are ill. Therefore, attendance is expected at every class meeting. Attendance per se does not count toward your grade, but clearly poor attendance will have a negative impact on your grade, so it is wise to attend class. It is the student's responsibility to know what we covered in class, so ask a fellow student and get notes from someone. Please do not email me and ask if you "missed anything important"! **IF YOU ARE SICK (ESPECIALLY WITH FLU SYMPTOMS) please STAY HOME!!** An email notifying me of your absence is appreciated if you miss more than two classes in a row.

D2L: Course documents (worksheets and worksheet keys, the syllabus, the list of suggested problems etc.) will be posted in D2L.

Calculators and Computers

A calculator will be required for this course. It must be capable of doing **two variable statistics** (including linear correlation and regression) and may be used on all exams. If you are going to purchase a calculator for this course, a good one might be the **TI-30X IIS.** It's easy to use, easy to find, and it doesn't cost much (less than $10). <u>Any scientific calculator that can handle two variable statistics will do</u>. (A graphing calculator is fine and a TI-83 Plus or TI-84 is very "user-friendly" for stats; I would not recommend *purchasing* a graphing calculator unless you will need it for other math classes.) You MAY NOT use your cell phone calculator on exams (specifically, you may not use a device that can communicate with others.)

The computer software MINITAB will be used extensively in this course (mostly for chapters 1, 2, 7, 8 and 9), and so when we are in those chapters, you will need to use the program for at least portion of your work outside of class. The program is very user-friendly, especially if you have any computer background to speak of. Instructional videos for using Minitab (as well as Excel and TI graphing calculators) are available online by searching YouTube. I have also posted a Minitab Guide in D2L. Minitab will allow us to more easily analyze data and will save a lot of time. When off campus you may remote into one of the campus labs – contact the HELP Desk if you need guidance on doing this. Using Excel (or sometimes a TI graphing calculator) instead of Minitab is another possible option.

Group Tutoring

The Department of Mathematical Sciences and the Tutoring-Learning Center (TLC) offer free drop-in and group tutoring to support you in your math classes. In addition, the TLC offers the option for individual math tutoring sessions. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and math content knowledge to help others succeed. Discussing mathematical concepts and practicing problems together clarifies and solidifies knowledge, and the tutors are eager to study with you. If you have questions about the schedules or would like to make an appointment, please visit the TLC in ALB 018 (library basement), email (tlctutor@uwsp.edu), or call (715) 346-3568 for information. This semester our group tutor will be Eric Weaver. He will be announcing times for his twice-weekly tutoring sessions soon and they will start week 3. (Note that low attendance at these sessions may result in their being cancelled!)

Suggested Problems

As with all math courses, it is very important to DO problems yourself. It is one thing to follow what I am doing in class, and another altogether to be able to do it on your own. You must practice! In light of this, I will be giving you a list of assigned exercises from the textbook that you should do. Please take responsibility for your learning and do these problems. These will NOT be collected or graded, and there are a variety of resources for checking your answers.

Assessment:

Worksheets (10% of your grade)

Worksheets will be given and answer keys will be posted in D2L AFTER their due dates. Sometimes I will simply check to see if you did the worksheet (and you will get 5, 3, or 0 points) and sometimes I will collect a worksheet and give a grade based on how accurate and complete your work is. Usually worksheets are due the next class period, and typically we at least start them together in class, and you finish it and show it to me the next day that class meets, or I will collect and grade them.

Unit Exams (74% of your grade)

There will be four unit exams. The first three exams will each be worth 20% of your total grade; your fourth exam (which will be a take-home) will be worth 14% of your total grade. For all but the **first** exam, you will be allowed to have a one-page crib sheet.

> *Please bring your textbook (or hard copies of relevant tables),*
> *calculator and crib sheet (except for Exam I) to all exams.*
> *All exam dates will be verified within one week of the exam.*
> **In the event that we are ready for Exam II before spring break,**
> **please do NOT plan to take off early for break!**

Topics covered for the exams (<u>dates subject to change</u>):

Exam I: Chapters 1 – 2   *Tentative date on or about 2/21*
Exam II: Chapters 3 – 4   *Tentative date on or about 3/15*
Exam III: Chapters 5, 6, 7.1   *Tentative date on or about 4/18*
Exam IV: Chapters 7, 8, 2.6 (and 9?)   *Tentative due date on or about 5/2*

Exam IV will be a take-home (you may work in small groups and will be using Minitab)
at the end of the semester. You will have 6 days to do this exam.

Final Exam (16% of your grade)

The final exam will be **comprehensive** and will count as 16% of your final grade. The final is on the first day of final exams, MONDAY, May 13th, at 5pm, in SCI D101. As with all the exams (except Exam I), you may have a crib sheet for this exam. **You may use your previously prepared crib sheets along with one additional sheet (a "sheet" is a regular 8.5x11 inch piece of paper, and no, I don't care if you write on only one side or two.** My only proviso is that you cannot bring a magnifying glass to read your crib sheet!).

Grading Scale:		A:	$\geq 92\%$	A – :	$\geq 90\%$ but $< 92\%$
B + :	$\geq 88\%$ but $< 90\%$	B :	$\geq 82\%$ but $< 88\%$	B – :	$\geq 80\%$ but $< 82\%$
C + :	$\geq 78\%$ but $< 80\%$	C :	$\geq 72\%$ but $< 78\%$	C – :	$\geq 70\%$ but $< 72\%$
D + :	$\geq 68\%$ but $< 70\%$	D :	$\geq 64\%$ but $< 68\%$	F :	$< 64\%$

General Course Policies:

1) You may work with other students on worksheets, assigned exercises, etc., but NOT on exams.

2) Exams must be YOUR work only unless I have specifically said I am allowing you to work with a partner (on take-homes).

3) **In general, make-up exams are NOT allowed. If there is an unavoidable conflict, a make-up MAY be allowed, but ONLY IF you contact me IN ADVANCE. In case of an emergency, you MUST contact me (best via email) or call the department office (346-2120) BEFORE the exam begins. You must be prepared to document your absence.**

Classroom Atmosphere:

In order to maintain a comfortable learning atmosphere, I expect that students will:

1. Keep their cell phones turned off during class!

2. Not be embarrassed to raise their hands to ask questions or be corrected.

3. Send emails that are properly addressed in an appropriate tone that contain grammatically correct sentences. ("Hey prof, sry I wuz L8 2day LOL" is unacceptable, and I WILL NOT reply). I prefer to be addressed as Mrs. Milkovich, or as Professor Milkovich.

4. Contact their fellow classmates when absent. In other words, if you miss a class, DO NOT call/email me to find out what you missed.

5. Become familiar with this syllabus. It answers many common questions. Read it.

6. Be in class on time, prepared to work. That means you have prepared by doing your homework and have skimmed the new section and are trying to clarify concepts you have encountered (as opposed to using class time to initially introduce yourself to the concepts).

Academic Integrity: (Cheating policy)

Any act of academic dishonesty will be dealt with by applying the most stringent penalties permitted. Cheating includes but is not limited to receiving help during exams and submitting homework without properly acknowledging persons who assisted you. Please read carefully the policy found at: http://www.uwsp.edu/dos/Pages/Academic-Misconduct.aspx

Accommodations:

Special consideration may be made for students with disabilities. Information regarding Section 504 of the Rehabilitation Act or the Americans with Disabilities Act can be found at the UWSP Disability and Assistive Technology Center site http://www.uwsp.edu/disability/Pages/Student%20Resources/default.aspx. To request any accommodations relevant to this class, you should first discuss the matter first with the staff at the Center. Details regarding the documentation necessary to qualify for accommodation can be found on the website.