

EPsy 5261





























































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































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**Welcome to  
EPsy 5261:  
Introductory  
Statistical**

# Methods

EPSY 5261 is  
designed to engage  
students in  
statistics by first  
building a  
conceptual  
understanding of  
statistics through



the use of  
simulation methods  
and then learning  
about the more  
traditional  
methods, such as t-  
tests and  
regression. This  
course uses  
pedagogical  
principles that are

founded in  
research, such as  
daily small group  
activities and  
discussion.

EPsy 5261 is a 3  
credit course. It is  
expected that the  
academic work  
required of

Graduate School and professional school students will exceed three hours per credit per week (see [Expected Student Academic Work Policy](#)). In my experience, it is typical for students to spend 10–15

hours a week on  
this course. As with  
every class, some  
students will spend  
more time than that  
on this course,  
while others will  
spend less time  
than that—it all  
depends on your  
prior experiences

with statistics and computing. If you find yourself consistently spending more than 20 hours a week on the course, please make an appointment to see the instructor so that we can

strategize about  
how to best  
optimize how you  
are devoting time  
to the course.

**CACREP**  
**Standard(s)**  
**Covered in**  
**EPSY 5261 (for**

# Counselor Ed. Students reference)

As a result of  
taking this course,  
Counselor  
Education students  
will:

- Learn about

quantitative  
research  
methods  
**(2.F.8.f)**

- Understand  
how to use  
randomized  
control  
design in  
research  
**(2.F.8.g)**



- Learn statistical methods used in conducting research **(2.F.8.h)**
- Understand ways to analyze and use data in

# counseling (2.F.8.i)

- Identify ethical and culturally relevant strategies for conducting, interpreting, and reporting the results of

research  
(2.F.8.j)

**Audience  
and  
prerequisites**

This course is intended for upper-level undergraduate and graduate students who have completed a high school algebra course. Although there are no formal prerequisites for this course,

students should have familiarity with computers and technology (e.g., internet browsing, Microsoft Word, opening/saving/attach files, etc.).

**Attention  
undergraduates:**

As this is a  
graduate level  
course, it does not  
fulfill the

Mathematical  
Thinking Liberal  
Education

requirement. If you  
would like to take a  
statistics course in  
our department that

fulfills that  
requirement, please  
consider EPSY  
3264.

**Course  
Goals,**

# **Objectives and Expectations**

Upon completion  
of this course,  
students should (1)  
have an  
understanding of



the foundational concepts of data, variation and inference; (2) be able to think critically about statistics used in popular magazines, newspapers, and journal articles; (3) be able to apply the

knowledge gained in the course to analyze simple statistics used in research; and (4) be able to investigate research questions using a large data set, use a statistical software package to analyze the data,

and appropriately  
report the  
conclusions from  
data study.

**This is not a  
traditional class  
where you only  
come each day,  
listen, watch, take  
notes, and work**

**entirely on your own.** This class was developed under the inverted classroom model which has a lot of research-based support. The inverted classroom “inverts” the traditional

instructor-centered  
classroom model  
and has you, the  
student, play a  
more active role in  
your learning. You  
will be required to  
first read about a  
topic yourself.  
Then, classroom  
time will be

devoted to learning activities and discussions to further develop and help you understand the topic. Finally, you will solve problems on homework related to the topic.

This course makes  
extensive use of  
small group  
activities and large  
group discussions  
to solidify ideas  
and content, as well  
as to deepen your  
understanding of  
material  
encountered in the

readings. Your learning experience is thus dependent—to some extent—on your classmates and vice versa.

Because of this, *it is essential that you not only attend class each day and participate in the*



*activities and  
discussions, but  
that you show up  
prepared having  
completed the  
reading.*

# **A Note on Inclusion and Respect**

In this class, we  
will work together  
to develop a  
learning  
community that is  
inclusive and

respectful, and  
where every  
student is  
supported in the  
learning process.  
As a class full of  
diverse individuals  
(reflected by  
differences in race,  
culture, age,  
religion, gender

identity, sexual  
orientation,  
socioeconomic  
background,  
abilities,  
professional goals,  
and other social  
identities and life  
experiences) I  
expect that  
different students

may need different things to support and promote their learning. The TAs and I will do everything we can to help with this, but as we only know what we know, we need you to communicate

with us if things are  
not working for  
you or you need  
something we are  
not providing. I  
hope you all feel  
comfortable in  
helping to promote  
an inclusive  
classroom through  
respecting one

another's  
individual  
differences,  
speaking up, and  
challenging  
oppressive/problematic  
ideas. Finally, I  
look forward to  
learning from each  
of you and the  
experiences you

bring to the class.

# Classroom

- Tuesday/Thurs  
(1:00pm–  
2:15pm):  
[Bruininks](#)



Hall 530B

# **Textbooks and Materials**

The course

textbook is available for free online. (There is no physical copy of the textbook, but you can print it out if that is a better option for you.)

- **Required:**  
Zieffler, A.,

& Legacy, C.  
(2023). An  
Introduction  
to Data  
Analysis.

# Statistical Computing

# **and Technology**

This course is  
taught in an active  
learning classroom  
and you are  
strongly  
encouraged to  
bring a laptop to

class on a daily basis.

Statistical computing is an integral part of statistical work, and subsequently, EPsy 5261. To support your learning in this

area, this course will emphasize the use of R. R is a free software environment for statistical computing and graphics.

(Information about how to download and use the

software can be found in the textbook.) You are responsible for getting things to work on your computer. While it should be straightforward, each OS and computer has their

quirks. I can try to help you with this if you are having trouble.

# **Technology Policy**

The course uses



technology on a regular basis during both instruction and assessments (e.g., homework assignments, exams, etc.). Student difficulty with obtaining or operating the various software

programs and technologies—including printer trouble—will not be acceptable as an excuse for late work. Due to the variation in computer types and systems, the instructor or TA

may not be able to  
assist in trouble  
shooting all  
problems you may  
have.

# **Course Requirement**

# **and Grading**

## **Lab Assignments**

There will be six  
lab assignments  
that together are

worth 90% of your grade. You will need to complete the lab assignments outside of class (as homework) and submit them via email to the instructor and TA. You can access each of the lab

assignment from the [Assignments page of the website](#). For each lab assignment, you may choose to work alone or in a group. Working in a group may allow you to explore answers to a

question with other students before submitting your lab assignment. Your lab assignment should be submitted via the course website before the end of the day that they are due (i.e., by

11:59 PM that day).

As a student of statistics, working through all of the lab assignments is an important piece in building a complete understanding of



the concepts, as well as allowing you to practice doing statistics. As a way of connecting the work you are doing across all lab assignments, you will explore the same data set for

each lab  
assignment.

## **Exit Tickets**

Exit tickets will be  
given in the last 5  
minutes of each  
class session. The

“ticket” consists of a single question designed to assess your knowledge about or have you reflect on the day’s class content.

These questions are to be completed individually. If you miss class you will

not have the  
opportunity to  
complete the exit  
ticket for that day  
(see *Policy for  
Missing Class and  
Making up  
Missed/Late Work*  
for exceptions).

# ChatGPT and Other AI

Artificial intelligence (AI) language models, such as ChatGPT, may be used to help you write R syntax with appropriate

citation, but not for answering any of the questions on the assignments or exams. (If a question on the assignments/exams asks you to provide your syntax, you cannot use AI to produce that

syntax!) If you are in doubt as to whether you are using AI language models appropriately in this course, I encourage you to discuss your situation with me or the TA.

Examples of citing  
AI language  
models are  
available at:

<https://libguides.umn.edu/ai-citation>

You are  
responsible for  
ensuring any  
syntax composed  
by AI is correct.

**Any student**



**caught using AI  
on the  
assignments or  
exit tickets will be  
given a zero on  
that particular  
assignment/exit  
ticket and  
reported to the  
university's Office  
for Community**

**Standards for  
scholastic  
dishonesty.**

**Policy for  
Missing Class  
and Making up  
Missed/Late**

# Work

Students are responsible for planning their schedules to avoid excessive conflicts with course requirements and must notify the instructor of

unavoidable  
scheduling  
conflicts as early as  
possible. For  
circumstances  
where absences are  
unavoidable,  
accommodations  
for makeup work  
will be made  
according to

# University Policy.

If you miss class:

- Email the instructor as soon as you know you will be missing class.
- Students are

expected to  
obtain notes  
from a  
classmate of  
class  
material  
missed.

- Please note  
that I will not  
be recording  
class

sessions at  
the request of  
individual  
students, nor  
will I be  
Zooming  
students in to  
the class.

Although, if  
you can  
arrange it

with a  
classmate,  
they can  
Zoom you in.

- If you  
are  
zooming  
in a  
classmat  
please  
let the



instructor  
know.

- If you will be gone the day an assignment is due, you will need to make arrangements with the instructor

about when  
you will turn  
in the  
assignment.

- To make up  
an exit ticket  
for a missed  
class you  
need to email  
your  
completed

in-class  
activity to  
the instructor  
in a timely  
manner  
(within 1  
week unless  
you  
specifically  
get approval  
from the

instructor).

Once the  
instructor  
receives your  
in-class  
activity, they  
will email  
you the exit  
ticket  
question for  
that day.

If you do not communicate with the instructor and make arrangements for turning in work when you are absent, the assignment/exit ticket will receive a 0.

# **Evaluation of Student Performance**

You will be  
evaluated on the  
basis of your  
performance on the

assignments and exit tickets outlined above. Your course grade will be computed as a weighted average of:

Type	Indiv or Grou
------	---------------------

Type	Indiv or Group
Lab	Indiv
Assignments	or Group
Exit Tickets	Indiv

This overall percentage in the class will then be



converted to a final  
course grade using:

Cutoff Grade	Definition
	Grade
	Criteria

**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

93%—  
100%      **A**

**For  
excep  
work,  
above  
minin  
criteri**

Cutoff Grade	FD	Defi
90%—	outsta	d
92%—	w	G
A—	ab	C
	min	in
	crit	eri

**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

87%—  
89%

**B+**

For  
excell  
work,  
signif  
above  
minin

# Cutoff Grade

83%–

86%

B

80%–

82%

B–

77%–

79%

C+

criteria

For v

above

min

criteria

**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

73%—  
76% C

For w  
which  
the cc  
requir  
in eve  
respec

**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

**70%—  
72% C—**

**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

63%—

69%

**D**

Worth  
credit  
thoug  
fails t  
the cc  
requir



**Cutoff Grade**

**Defi  
f  
Gra  
Cr**

0%—  
62%

**F**

Failed  
meet  
minin  
course  
requir

If you are taking the course S/N, the minimum criterion to receive an S is 80% (the equivalent of a B–letter grade). The S grade does not carry grade points and is not part of the GPA

calculation, but the credits will count toward the student's degree program if allowed by the college, campus, or program.

*Any student who does not complete*

*all lab assignments  
by the time the final  
lab assignment is  
due without making  
prior arrangements  
with the instructor  
will receive a  
grade of F/N.*

# Extra Credit Policy

Extra credit *may* be offered throughout the semester, but is not guaranteed.

# Incomplete

Instructors may assign the registration symbol “I” for Incomplete if, at the time the incomplete is requested: (1) the student has successfully

completed a  
substantial portion  
of the work of the  
course; and (2) due  
to extraordinary  
circumstances (*as  
determined by the  
instructor*), the  
student was  
prevented from  
completing the

work of the course  
on time. The  
assignment of an  
“I” requires a  
written agreement  
with the student  
specifying the time  
and manner in  
which the student  
will complete the  
course



requirements. For more information see [Grading and Transcripts](#).

## **Accessing Course Grades**

Shortly after the

course, you may  
access your grades  
online at [myU](#).

Assignments will  
be handed back in  
class or during  
office hours.

Uncollected  
assignments will be  
retained for six  
weeks after the

course and then  
discarded.

# **Stress Management**

Stress management  
is an important  
piece of the skill

set needed for  
success in graduate  
school. Pet Away  
Worry & Stress  
(PAWS) is one of  
the many resources  
available to  
students. Find out  
more at  
<https://boynton.umn.edu/paws>

You can follow Tilly the  
Therapy Chicken on Twitter  
(@TherapyChicken).

# **CEHD Policy on Recording Classes**

All class sessions

may be recorded by the instructor using the procedures in the CEHD Policy on Recording Classes, with or without prior notice. Students should assume that a class session is being recorded

unless otherwise  
notified. No person  
(student or  
otherwise) may  
record a class  
without express  
written permission  
from the instructor  
or an authorized  
administrator  
implementing a

disability

accommodation.

All permitted  
recordings are  
governed by this  
policy's limits on  
distribution and  
redistribution of  
recordings.



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