EPSY 3264

BASIC & APPLIED STATISTICS

Course Description

EPsy 3264 is designed to engage students using a modeling and simulation approach to inference. This course fulfills the Mathematical Thinking component of the Liberal Education requirements at the University of Minnesota. Statistics is more than just an application of mathematics or a methodology used in some other discipline. Statistics is a principled way of thinking about the world. In particular, it is a principled approach to data collection, prediction, and scientific inference. In today's dynamic and interdisciplinary world, success in confronting new analytical issues requires both substantial knowledge of a scientific or technological area and highly flexible problem-solving strategies. This course uses pedagogical principles that are founded in research, such as daily small group activities and discussion. Upon completion of this course, students should have an understanding of the foundational concepts of data, variation and inference, as well as an appreciation for the fundamental role that statistics plays in a host of disciplines, such as business, economics, law, and medicine.

Student Learning Outcomes (SLOs)

EPSY 3264 addresses two components of the University of Minnesota's required learning outcomes.

- After completing this course, students will know the basic terms, concepts, principles, methods, and perspectives of statistics and will be able to build a framework of knowledge within the major themes of the course (Component 3: Have mastered a body of knowledge and mode of inquiry).
- Students will also be able to communicate the results of a statistical analysis with others, as well as discuss both ideas and applications of the discipline with peers (Component 5: Can communicate effectively).

Course Meeting Time

M, W, 9:45 AM–11:00 AM

Classroom

Bruininks Hall 131A

Course Materials

These will be sent via email and posted to the course website.

Textbook

Available online at http://zief0002.github.io/statistical-thinking/

Lab Manual

Statistical thinking 4.2: A simulation approach to modeling uncertainty (PDF)

Software

TinkerPlots 2.3™.

Course Website

http://zief0002.github.io/epsy-3264/

2019

Fall Term

Instructor

Andrew Zieffler
Office: Educational Sciences Building 178
Office Hours: Wednesday 9:00 AM–10:00 AM; and by appointment
Email: zief0002@umn.edu

Liberal Education

EPsy 3264 fulfills the Mathematical Thinking component of the Liberal Education requirements at the University of Minnesota. An important part of any liberal education is learning to use abstract thinking and symbolic language to solve practical problems. Understanding quantitative information is fundamental for engaging in our complex world. Business, academia, and even everyday life are filled with the enumeration of information, and all increasingly require data-driven decision-making.

In this course, students will be immersed in the fundamental activities of collecting data, producing data, analyzing data, and interpreting summaries and analyses of data. In addition, students will encounter the diversity and cross-disciplinary application of statistics in the real-world through problem contexts, assignments and readings.

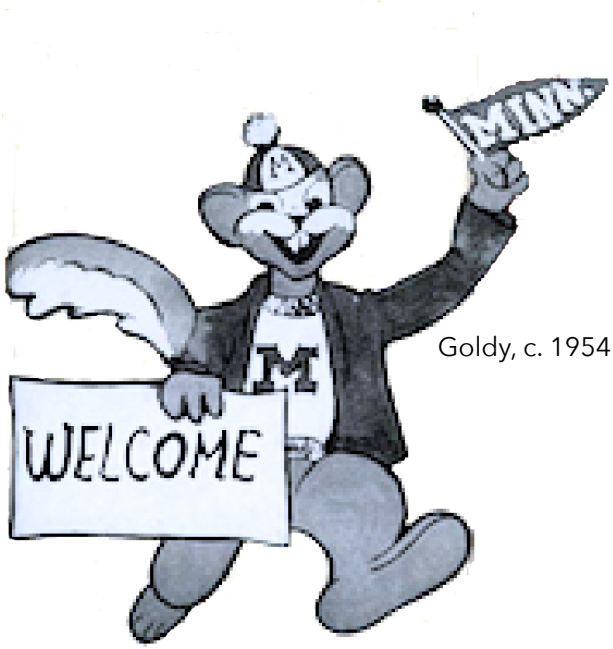
Course Prerequisites

This course is intended for undergraduate students who have completed a high school algebra course, but not previously studied statistics. The course uses technology on a regular basis during both instruction and assessments (e.g., homework assignments, exams, etc.). Because of this, students enrolled in the course **should be familiar with computers and technology** (e.g., internet browsing, Microsoft Word, opening/saving files, etc.).

Course Philosophy & Format of Instruction

This is **not** a class where you only come each day, listen, watch, and take notes! The primary method for learning new statistical concepts and methods will be by reading provided materials before class, participating in class activities and discussions, and working through lab assignments. This course makes extensive use of small group and large group activities and discussions to introduce ideas and 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 assigned readings**.

Internalizing a discipline's way of thinking about and solving problems is a time-consuming process, with the keyword being "process." It is not something that can be taught to students in a semester, or even year-long, course. Learning statistics takes much more than memorizing formulas or software commands. It requires active participation and questioning both in and out of the classroom. The instructor(s) of this course will provide you with many opportunities to learn the material through class activities, readings, and lab assignments, but in the end, you will have to do all of the hard work of actually learning that material.

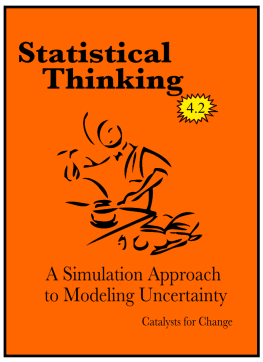


Goldy, c. 1954

Required Course Materials

The course website, http://zief0002.github.io/epsy-3264/, is the organizational hub of the course. This website will provide links to all of the readings, assignments, and other course materials. You can also access many of the course materials directly:

- The course textbook, which includes the out-of-class readings, is available online at http://zief0002.github.io/statistical-thinking/.

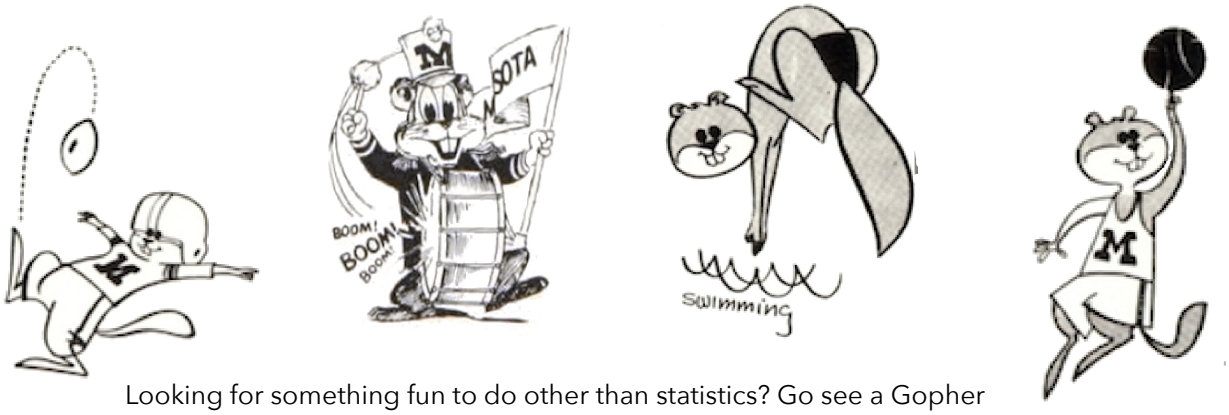


- You will work from the lab manual, *Statistical Thinking 4.2: A Simulation Approach to Modeling Uncertainty,* every day in class. To download a PDF copy of the lab manual, click this link: https://github.com/zief0002/statistical-thinking/blob/master/statistical-thinking-v4.pdf?raw=true **You will need to bring the lab manual to class with you every day**.

- There are several data sets used in the lab manual, as well as in EPSY 3264 assignments. To download a ZIP file to your computer that includes all the data sets, click this link: https://github.com/zief0002/statistical-thinking/blob/master/data.zip?raw=true. Once the ZIP file has been downloaded to your computer, double-click the ZIP file to unzip it and access the materials.

- Much of the material presented in the lab manual requires the use of TinkerPlots™. This software can be downloaded (for Mac or PC), and a license can be purchased from http://www.tinkerplots.com/. *Note, since this software needs to be installed, it will not work on a Chromebook or other notebooks that only run web apps.*

TinkerPlots™
DYNAMIC DATA EXPLORATION



Looking for something fun to do other than statistics? Go see a Gopher game http://www.gophersports.com/

Course Requirements

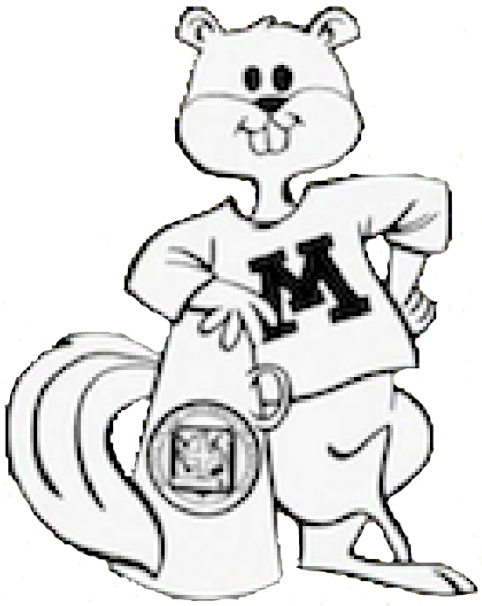
Individual Assignments

There are 8 individual assignments, which you need to complete outside of class. Each assignment will make up 8% of your grade. They include problems that will help you learn the course material and software through reflection and practice. All of the assignments will require the use of TinkerPlots™. Submitted lab assignments must be typed—handwritten assignments will receive no credit—printed, and brought to class. **Assignments are due at the beginning of the class period that they are due**. Assignments submitted up to one day late will receive a 10% reduction in score, based on the total points of the assignments. Students submitting an assignment more than 24 hours after the due date/time will be provided with feedback (if the assignment is submitted before the corresponding group quiz), but will receive a score of 0 for the assignment. Assignments that are submitted via e-mail (without prior instructor approval) will receive no credit.

> Although you work with other students in the classroom, **you need to complete the assignments on your own.** Collaboration is not permitted on the assignments. *Sharing your work, TinkerPlots files, or talking about answers with other students (even if you have the best of intentions), is a violation of the Student Conduct Code*. Instructors are required to report *all students* involved in incidents of scholastic dishonesty to the Office for Community Standards (OCS). In cases where scholastic dishonesty has occurred, all students involved will be given a 0 for the assignment in question, and may be given an "F" or an "N" for the course, as well as, face additional sanctions from the University.

Group Quizzes

There are 5 in-class group quizzes. Each quiz will make up 7.2% of your grade. Each quiz consists of several short answer questions designed to test your ability to apply the knowledge you gained by reading the assigned material, working on assignments, and participating in class activities and discussions. **You will also be expected to use TinkerPlots™ on the group quizzes**.



Goldy, c. 1965

It is expected that you will work cooperatively with your group members to decide on the answers to the questions posed in the group quiz. Only one quiz per group will be graded, and each student in the group will receive the same grade.

If you arrive late for a quiz, or have missed previous class periods, you may be required to take the quiz by yourself. The instructor also reserves the right to re-assign groups on the day of the quiz.

If you have an excused absence and miss a quiz, the make-up quiz will be administered at the end of the semester (time and location TBD) and will cover content from the entire course. If you fail to make-up the quiz at the rescheduled time, you will receive zero credit for the quiz. You also may have to take the quiz on your own (depending on whether other students need to make-up a quiz).

Attendance

In a collaborative learning environment, **attendance is critical**. Missing class does not only affect you. It also affects your classmates. Because of the adverse impact missing class may have on your classmates, the instructor reserves the right to re-assign groups on the day of the quiz, or have you work independently. **As a courtesy If you cannot be in class, you should email your group members with as much advance warning as possible.**

Please be on time. Showing up late to class is not only disruptive, it is disrespectful to your classmates. When you show up late, your group needs to spend valuable time catching you up on what you missed. If you show up late for group quizzes, you may be required to take the quiz by yourself.

If you are absent on the day a quiz or homework is due, you must provide documentation explaining your absence for the instructor to determine whether you will be allowed to turn in that homework later or take a make-up quiz. This will be at the instructor's discretion and will be evaluated on a case-by-case basis (see policy at https://policy.umn.edu/education/makeupwork).

Class Participation

Engaging in active class participation is an important part of taking ownership of your learning. Active participation is more than just showing up for class. It also includes being engaged during the class, asking questions (if you have a question, it is likely that others do as well), providing additional insight and material, responding to other students and the instructor, and always being open and inquisitive.

Readings

Completing the assigned readings prior to class is an important part of being successful in EPsy 3264. The readings and due dates for the readings are listed in the course calendar and can be found on the course website.

How Can I Be Successful in this Course?

There are several things you can do to be successful in this course. First and foremost, complete all of the readings and come prepared to class. Complete all of the lab assignments. Ask questions. If you are experiencing problems, need help, or have any questions or other course-related concerns, do not hesitate to get in touch with the instructor or TA.

Professionalism

Evidence of professional practice on both our parts includes:

(a) starting and ending on time,
(b) being prepared,
(c) being physically and mentally engaged,
(d) performing at a high level,
(e) making sure cell phones are off, and
(f) refraining from sending and receiving e-mail, playing solitaire, shopping, face-booking, texting, tweeting, and twittering during class.

Evaluation of Student Performance

Grades will be based on the **weighted average** of your individual assignments (8% each), and group quizzes (7.2% each). For more information on computing a weighted average, see http://mathforum.org/library/drmath/view/57605.html. Grades will be assigned using the following criteria as a guideline:

Cutoff	Grade	Cutoff	Grade	Cutoff	Grade
93%	A	83%	B	73%	C
90%	A–	80%	B–	70%	C–
87%	B+	77%	C+	63%	D

Students who earn below 63% will receive the letter grade of F. Students who wish to receive a Satisfactory (S) must obtain the total points required for a C– grade; anything less will be graded as N (Unsatisfactory).

Shortly after the course, you may access your grades on-line at http://www.onestop.edu. Assignments will be handed back in class or during office hours. Uncollected assignments will be retained for three weeks after the course and then discarded. You can pick those up in EdSciB 250.

Course Calendar

The calendar below lists the tentative dates of the course topics and group activities, as well as the dates for the in-class assessments. These dates are subject to change at the instructor's discretion.

Date	Name	Unit
Sept. 4	Introduction to EPsy 3264	Introduction
	Reading: *Introduction*	Introduction
	Reading: *Modeling & Simulation*	Modeling and Simulation
Sept. 9	Spotify Playlists	Modeling and Simulation
	Reading: *Generating Data From Models*	Modeling and Simulation
Sept. 11	**Assignment #1 Due (Learning TinkerPlots)**	Modeling and Simulation
	Generating Random Data—Cat Factory	Modeling and Simulation

Date	Name	Unit
	Reading: *Monte Carlo Simulation*	Modeling and Simulation
Sept. 16	Introduction to Monte Carlo Simulation	Modeling and Simulation
Sept. 18	**Assignment #2 Due (Free Throws)**	Modeling and Simulation
	Automating the Simulation Process	Modeling and Simulation
Sept. 23	**Group Quiz #1**	Modeling and Simulation
	Reading: *Modeling Sampling Variation*	Modeling Sampling Variation
Sept. 25	Monday Breakups	Modeling Sampling Variation
Sept. 30	Features of Distributions	Modeling Sampling Variation
	Reading: *Describing Distributions*	Modeling Sampling Variation
Oct. 2	**Assignment #3 (Distracted Driving) Due**	Modeling Sampling Variation
	Helper or Hinderer	Modeling Sampling Variation
Oct. 7	Comparing Hand Spans	Modeling Sampling Variation
Oct. 9	**Assignment #4 (College Debt) Due**	Modeling Sampling Variation
	Racial Disparities in Police Stops	Modeling Sampling Variation
Oct. 14	**Quiz #2**	Modeling Sampling Variation
	Reading: *Experimental Variation and the Randomization Test*	Experimental Variation and the Randomization Test
Oct. 16	Memorization	Experimental Variation and the Randomization Test

Date	Name	Unit
Oct. 21	Memorization using TinkerPlots™	Experimental Variation and the Randomization Test
Oct. 23	Sleep Deprivation	Experimental Variation and the Randomization Test
	Reading: *Quantifying Results: p-Value*	Experimental Variation and the Randomization Test
Oct. 28	Contagious Yawns	Experimental Variation and the Randomization Test
	Reading: *Internal Validity Evidence and Random Assignment*	Experimental Variation and the Randomization Test
Oct. 30	**Assignment #5 (Dolphin Therapy) Due**	Experimental Variation and the Randomization Test
	Strength Shoe	Experimental Variation and the Randomization Test
Nov. 4	**Group Quiz #3**	Experimental Variation and the Randomization Test
	Reading: *Sampling Variation and the Bootstrap Test*	Sampling Variation and the Bootstrap Test
Nov. 6	Speed Skating	Sampling Variation and the Bootstrap Test
	Reading: *External Validity Evidence and Random Sampling*	Sampling Variation and the Bootstrap Test
Nov. 11	Gettysburg Address	Sampling Variation and the Bootstrap Test

Date	Name	Unit
	Reading: *Validity Evidence and Inferences*	Sampling Variation and the Bootstrap Test
	Reading: *Observational Studies and the Bootstrap Test*	Sampling Variation and the Bootstrap Test
Nov. 13	Murderous Nurse	Sampling Variation and the Bootstrap Test
Nov. 18	**Assignment #6 (Lyric Readability) Due**	Sampling Variation and the Bootstrap Test
	Movie Sequels	Sampling Variation and the Bootstrap Test
Nov. 20	**Group Quiz #4**	Sampling Variation and the Bootstrap Test
	Reading: *Estimating Uncertainty*	Estimating Uncertainty
Nov. 25	Kissing the 'Right' Way	Estimating Uncertainty
Nov. 27	Cuddling Preferences	Estimating Uncertainty
	Reading: *Uncertainty and Bias*	Estimating Uncertainty
Dec. 2	**Assignment #7 (College Student Health Survey) Due**	Estimating Uncertainty
	Minnesota College Debt	Estimating Uncertainty
Dec. 4	Comparing Cuddling Preferences	Estimating Uncertainty
Dec. 9	**Group Quiz #5**	
Dec. 11	**Assignment #8 (Dolphins and Pigs) Due**	Estimating Uncertainty
	TBA	

Email

Email is the primary source of communication among instructors, teaching assistants, and students for this course. As such, you will be expected to check your email frequently (i.e., at least once per day). As per the University policy, "students are responsible for all information sent to them via their University assigned email account. If a student chooses to forward their University email account, he or she is responsible for all information, including attachments, sent to any other email account."

Course Technology Policy

The course uses technology on a regular basis during both instruction and assessments (e.g., lab 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.

Campus Computer Labs

The Office of Information Technology (OIT) manages numerous computer labs on the Twin Cities campus. Students from all colleges may drop in to use the computer labs during open hours. The OIT website contains information pertaining to the location, hours, and software available for each of the computer labs (http://www.oit.umn.edu/computer-labs/).

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html

Mac Users

If you are using a Mac and seem to have problems downloading files from the course website, hold the option-key while clicking on the file link. This should download the file to your desktop. You then need to erase the *.txt* suffix that is appended to the end of the file. For example, a TinkerPlots file should have the suffix *.tp*, and not *.tp.txt*.

Quantitative Methods in Education Mission Statement

QME strives to be a premier program recognized for leadership, innovation, and excellence, and to enable human potential through the advancement of education. QME prepares students to become cutting-edge professionals in educational measurement, evaluation, statistics, and statistics education, through excellence in teaching, research, and service; and through investigating and developing research methodology in education.

Department of Educational Psychology Mission Statement

Educational psychology involves the study of cognitive, emotional, and social learning processes that underlie education and human development across the lifespan. Research in educational psychology advances scientific knowledge of those processes and their application in diverse educational and community settings. The department provides training in the psychological foundations of education, research methods, and the practice and science of counseling psychology, school psychology, and special education. Faculty and students provide leadership and consultation to the state, the nation, and the international community in each area of educational psychology. The department's scholarship and teaching enhance professional practice in schools and universities, community mental health agencies, business and industrial organizations, early childhood programs, and government agencies. *Adopted by the Department. of Educational Psychology faculty October 27, 2004*

College of Education + Human Development Mission Statement

The mission of the University of Minnesota College of Education and Human Development is to contribute to a just and sustainable future through engagement with the local and global communities to enhance human learning and development at all stages of the life span.

Tilly the Therapy Chicken
@TherapyChicken

Stress Management

Stress management is an important skill to develop for success in graduate school. Pet Away Worry & Stress (PAWS) is one of the many resources available to students. Find out more at http://www.bhs.umn.edu/services/wellness-paws.htm

University of Minnesota Policies and Procedures

Academic Freedom and Responsibility

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.* Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor (Andrew Zieffler; zief0002@umn.edu), the Department Chair (Kristen McMaster; mcmas004@umn.edu), your adviser, the associate dean of the college (Frank Symons; symon007@umn.edu), or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost (Rebecca Ropers; ropers@umn.edu).

**Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*

Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/education/studentresp.

Disability Accommodations

The University of Minnesota views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (612.626.1333) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, can often work with instructors to minimize classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact your (access consultant/ disability specialist).

Additional information is available on the DRC website: diversity.umn.edu/disability or e-mail drc@umn.edu with questions.

Equity, Diversity, Equal Opportunity, and Affirmative Action

The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://www1.umn.edu/regents/policies/administrative/Equity_Diversity_EO_AA.html.

Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: http://policy.umn.edu/education/makeupwork.

Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.

Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: http://policy.umn.edu/education/instructorresp.
The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-dishonesty. permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Senate Academic Workload Policy

One conventional credit is hereby defined as equivalent to three hours of learning effort per week, averaged over an appropriate time interval, necessary for an average student taking that course to achieve an average grade in that course. It is expected that the academic work required of graduate and professional students will exceed three hours per credit per week or 45 hours per semester.

Sexual Assault and Higher Education: Training Modules and Information

The Department of Educational Psychology supports the efforts of the University of Minnesota towards prevention of sexual assault. We encourage all students to participate in the free online training that has been established for undergraduate students and graduate students. The training highlights pertinent issues regarding sexual assault, including, but not limited to: defining healthy relationships, consent, bystander intervention, and gender roles. The guide for the training in your My Training page is available at https://it.umn.edu/training-guide-preventing-responding. Additionally, to learn more about how you can help reduce sexual assault at the University of Minnesota, please visit the Aurora Center.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: https://regents.umn.edu/sites/regents.umn.edu/files/policies/Sexual_Harassment_Sexual_Assault_Stalking_Relationship_Violence.pdf

Student Conduct Code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community. As a student at the University you are expected adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Grading and Transcripts

University Grading Scales

The University has two distinct grading scales: A–F and S–N.

A–F grading scale. The A–F grading scale allows the following grades and corresponding GPA points:

Grade	GPA Points	Definitions for undergraduate credit
A	4.000	Represents achievement that significantly exceeds expectations in the course.
A–	3.667	
B+	3.333	
B	3.000	Represents achievement that is above the minimum expectations in the course.
B–	2.667	
C+	2.333	
C	2.000	Represents achievement that meets the minimum expectations in the course.
C–	1.667	
D+	1.333	
D	1.000	Represents achievement that partially meets the minimum expectations in the course. Credit is earned but it may not fulfill major or program requirements.
F	0.000	Represents failure in the course and no credit is earned.

S–N grading scale. The S–N grading scale allows for the following grades and corresponding GPA points:

Grade	GPA Points	Definitions for undergraduate credit
S	0.000	Satisfactory (equivalent to a C- or better)
N	0.000	Not Satisfactory

For additional information, please refer to: https://policy.umn.edu/education/gradingtranscripts.