

PubH 6355
Pathophysiology of Human Disease
Fall 2016

Credits:	4	
Meeting Days:	Lecture: Tuesdays & Thursdays: 8:15 am – 9:30 am, Mayo A-110 Lab/Recitation: Mondays, 11:15 am – 1:10 pm, Mayo A-110	
Instructors:	Weihong Tang, M.D., Ph.D. Associate Professor 449 WBOB Ph: 612/626-9140 Fax: 612/624-0315 tang0097@umn.edu	Anna Prizment, Ph.D. Assistant Professor 431 WBOB Ph: 612/626-0250 Fax: 612/624-0315 prizm001@umn.edu
TA:	Guillaume Onyeaghala, email: onyea005@umn.edu .	
Office Hours:	Dr. Tang — Tuesday after lecture 9:30am-10:30am (Moos Tower, please see separate file for room numbers) & by appointment Dr. Prizment — By appointment (Thursdays after lecture 9:30am-10:30am, Moos Tower, please see separate file for room numbers) or in WBOB if on another day Guillaume Onyeaghala — Mondays before lab 10:00am-11:00am (SPHere lounge)	

I. Course Description

Welcome to Pathophysiology of Human Disease. This course presents a compendium of human diseases relevant to the public health professional. The material will be presented from an epidemiologic perspective that focuses on disease prevalence, incidence, morbidity and mortality, risk factors, and prevention strategies. It will emphasize mechanisms of development (pathogenesis), and progression, pathophysiologic associations with risk factors, structural alterations (morphologic changes) resulting from the disease, and the functional consequences of these structural changes (clinical significance).

The course is divided into **5 Units**:

1. **General pathophysiology:** Cells, tissues, organ structure and function. Pathophysiologic mechanisms of acute and chronic injury, necrosis/apoptosis & tissue repair (the healing process).
2. **Cardiovascular diseases:** Hyperlipidemia, atherosclerosis, coronary artery disease, hypertension, heart failure, thromboses, and stroke.
3. **Cancers:** Molecular basis for cancer development and progression, etiologic factors related to development of cancer, kinetics of tumor growth and the genetic contribution to cancer. Specific cancers covered in the course include lung, breast, colorectal, cervix, and prostate.
4. **Infectious diseases:** Immune function and immune pathology, categories of infectious agents, mechanisms and pathogenesis of infectious diseases, tuberculosis, malaria, influenza and HIV/AIDS.

5. **Other chronic health conditions:** An overview of the genetic contribution to chronic disease, obesity, diabetes mellitus, chronic obstructive pulmonary disease (COPD), renal disease, and Alzheimer's disease.

II. Course Prerequisites

Epidemiology and Public Health Nutrition MPH Students or by permission from Instructor

III. Course Goals and Objectives

After completion of this course, students will be able to:

- To provide a framework for understanding the pathophysiologic mechanisms responsible for diseases of major public health importance.
- To explain the pathologic processes underlying structural and functional disorders and their clinical significance.
- To describe variables influencing the adaptive potential of individuals within their environment and throughout their life span.

IV. Methods of Instruction and Work Expectations

The course includes the five units previously mentioned. Each unit contains multiple lectures, several lab/recitation sessions and an examination for the unit. The lectures will provide core content, the lab/recitation and the opportunity to apply the material and the exam to demonstrate your competence of the material.

1. Course Expectations & Effort

Please pace yourself through the course according to the syllabus and class schedule. The course schedule includes dates for lectures, lab/recitations, and the examinations.

University of Minnesota policy states that work expectations per credit hour are fixed at a ratio of 1:3. That is, a single credit course assumes three hours of work per week including class attendance. The course has been designed with this expectation in mind; however, this is an average. Some weeks may require more time and other weeks less.

2. Examination Dates

The exam dates are listed in the syllabus and posted on the course calendar on Moodle. If you anticipate any difficulty meeting a deadline (due to a family emergency, documented illness, or attendance at a professional conference), arrangements must be made with your instructors and/or TA in advance of the actual due date to receive full credit for the assignment .

3. Questions about Course Material and Assignments

This course has 2 faculty instructors, a TA and several guest lecturers. Please do not hesitate to call or email us if you have questions or you would like to set up a time to meet.

V. Course Text and Readings

1. *The Nature of Disease-Pathology for the Health Professions*, Author: McConnell, Publisher: Lippincott Williams & Wilkins, second edition, 2014
2. Additional readings available on the Moodle course homepage for specific topics

VI. Course Outline/Weekly Schedule

Date	Lecture Topics
Unit 1	General Pathophysiology
September 6 Tuesday	Overview of course & core concepts Reading: McConnell, Chapter 1; pp. 2-15 Lecturer: Tang
September 8 Thursday	Cells, tissues, organs & systems Readings: Supplemental readings Lecturer: Tang
September 12 Monday	<i>Lab/Recitation #1</i> Review Cell structures, function and cell permeability & transport; sensitivity and specificity Web Resources: <ul style="list-style-type: none"> • Cells Alive @ http://cellsalive.com/ • Cell Biology Animation @ http://www.johnkyrk.com/index.html • http://www.wiley.com/legacy/college/boyer/0470003790/animations/membrane_transport/membrane_transport.htm
September 13 Tuesday	Cell injury, repair & cell death Reading: McConnell, Chapter 2; pp. 16-26 & pp. 35-41 Lecturer: Tang
September 15 Thursday	Homeostasis Reading: McConnell, Chapter 14; pp. 409-417 Lecturer: Tang
September 19 Monday	Examination 1: General Pathophysiology Unit

Unit 2	CVD
September 20 Tuesday	Hemodynamics & blood pressure Readings: McConnell, Chapter 6, pp. 140-148, chapter 8, pp. 212-216, chapter 15, pp. 447-453 Lecturer: Tang
September 22 Thursday	Hypertension Readings: <ul style="list-style-type: none"> • McConnell. Chapter 8, pp. 218-222, chapter 9, pp. 239-244, pp. 261-262 • Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. NHLBI, 2003 • 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8) Lecturer: Tang
September 26 Monday	<i>Lab/Recitation #2</i> ECG lecture and demonstration Readings: <ul style="list-style-type: none"> • McConnell, Chapter 9; pp. 241-244

	Web Resource: http://www.medicine.mcgill.ca/physio/vlab/cardio/introECG.htm
September 27 Tuesday	<p>Lipid metabolism</p> <p>Readings:</p> <ul style="list-style-type: none"> • McConnell, Chapter 8; pp. 216-218 • 3rd Report of the National Cholesterol Education Program (NCEP) Expert Panel, NHLBI, 2001, <i>JAMA</i>, 2001;285:2486-2497 • Grundy et. al., Implications of recent clinical trials for the NCEP Report, <i>Circulation</i>, 2004;110:227-239 • 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults <p>Web Resource: The Lipid Library: http://lipidlibrary.aocs.org/ (please focus on Lipoproteins/Plasma lipoproteins under "A Lipid Primer/Simple Lipids")</p> <p>Lecturer: Tang</p>
September 29 Thursday	<p>Atherosclerosis & coronary artery disease</p> <p>Readings:</p> <ul style="list-style-type: none"> • McConnell. Chapter 9, pp. 248-255 • NHLBI: Assessing Cardiovascular Risk: Systematic Evidence Review from the Risk Assessment Work Group (https://www.nhlbi.nih.gov/health-pro/guidelines/in-develop/cardiovascular-risk-reduction/risk-assessment) • Libby et al, <i>Circulation</i> 2005, 111: 3481-8 <p>Web Resource: 10-year CVD Risk Calculator: http://tools.acc.org/ASCVD-Risk-Estimator/</p> <p>Lecturer: Tang</p>
October 3 Monday	<p><i>Lab/Recitation #3</i></p> <p>The Visible Heart Laboratory Tour, Mayo B172 CVD Risk Calculation and Blood Pressure Measurement 10-year CVD Risk Calculator: http://tools.acc.org/ASCVD-Risk-Estimator/</p>
October 4 Tuesday	<p>Heart failure</p> <p>Readings: McConnell, chapter 9, pp. 239-248</p> <p>Lecturer: Jason Brown</p>
October 6 Thursday	<p>Cerebral circulation & stroke</p> <p>Readings: McConnell, Chapter 19; pp. 617-622</p> <p>Lecturer: Tang</p>
October 10 Monday	<p>Examination 2: CVD Unit</p>

Unit 3	Cancer
October 11 Tuesday	<p>Neoplasms—fundamental characteristics</p> <p>Readings:</p> <ul style="list-style-type: none"> • McConnell, Chapter 5; pp. 114-138 • Hanahan and Weinberg: The Hallmarks of Cancer: The Next Generation, 2011, <i>Cell</i>, Vol. 144: 646-674 <p>Lecturer: Prizment</p>
October 13 Thursday	<p>Lung cancer</p> <p>Readings: McConnell, Chapter 10; pp.278-282 & 298-302</p> <ul style="list-style-type: none"> • Alberg & Samet: Epidemiology of Lung Cancer, <i>Chest</i> 2003;123;21S-49S • NCI Fact Sheet-Harm of Smoking <p>Lecturer: Prizment</p>
October 17	<p><i>Lab/Recitation #4</i></p>

Monday	Carcinogens (Short lecture, Lecturer: Guillaume Onyeaghala) Readings: NCI Link to Known Human Carcinogens URL Paper discussion Exercise 1. Review of cancer concepts See class web Page for more details
October 18 Tuesday	Colorectal cancer Readings: <ul style="list-style-type: none"> • McConnell, Chapter 11; pp. 307-310 & 339-343 • NCI Fact Sheet-Colorectal Cancer Advances (2010) Lecturer: Prizment
October 20 Thursday	Breast cancer Readings: <ul style="list-style-type: none"> • McConnell, Chapter 17; pp. 542-544 & 547-553 • NCI Fact Sheet-Breast Cancer Advances (2010) • NCI Fact Sheet- BRAC 1 & 2 (2009) Lecture: Prizment
October 24 Monday	<i>Lab/Recitation #5</i> Demonstration: Tumor tissues from the pathology lab Exercise 1: Cancer incidence and mortality Paper discussion See class web page for more details Topic Proposal for Term Paper Due
October 25 Tuesday	HPV & cervical cancer Readings: <ul style="list-style-type: none"> • McConnell, Chapter 17; pp. 509-512 & 523-531 • NCI Fact Sheet-Cervical Cancer Advances (2010) • NCI Fact Sheet-HPV & Cancer (2012) Lecturer: Kristin Anderson
October 27 Thursday	Prostate cancer Readings: <ul style="list-style-type: none"> • McConnell, Chapter 16; pp. 488-492 & 499-504 • NCI Fact Sheet-Prostate Cancer Advances (2010) • NCI Fact Sheet-PSA Screening (2012) Lecture: Prizment
October 31 Monday	Examination 3: Cancer Unit

Unit 4	Infectious Disease
November 1 Tuesday	Inflammation Readings: McConnell, Chapter 2; pp. 26-41 Lecturer: Prizment
November 3 Thursday	The immune system Readings: McConnell, Chapter 3; pp. 45-64 Lecturer: Tang
November 7 Monday	<i>Lab/Recitation #6</i> Basic Concepts in Infection and Infectious Diseases Lecturer: Tang

November 8 Tuesday	HIV/AIDS Readings: <ul style="list-style-type: none"> • McConnell, Chapter 3; 70-75; 91; 106-107 • CDC Fact Sheet-HIV & AIDS in U.S (2014-2016). Lecturer: Alan Lifson
November 10 Thursday	Tuberculosis Readings: <ul style="list-style-type: none"> • McConnell, Chapter 4; pp. 97-101 • CDC Fact Sheet-Trends in TB (2014) and TB Elimination (2011) Lecturer: Tang
November 14 Monday	<i>Lab/Recitation #7</i> Other Infectious Diseases Specific Cases of TB, HIV/AIDS, Influenza, Malaria and NTDs Readings: McConnell, Chapter 4; pp. 79-111
November 15 Tuesday	Influenza Readings: <ul style="list-style-type: none"> • McConnell, Chapter 4; pp. 89 • CDC Fact Sheet-Overview of Influenza Surveillance in U.S. (2016) Lecturer: Ruth Lynfield
November 17 Thursday	Malaria Readings: <ul style="list-style-type: none"> • McConnell, Chapter 4; 102-103; Chapter 7, 187-189 • WHO's World Malaria Report (2015) (http://apps.who.int/iris/bitstream/10665/200018/1/9789241565158_eng.pdf?ua=1) Lecturer: Tang
November 21 Monday	Examination 4: ID Unit

Unit 5	Other Chronic Disease
November 22 Tuesday	Genetic contributions to human disease – An overview Readings: McConnell, Chapter 22; pp. 716-729 Lecturer: Tang
November 24 Thursday	Thanksgiving
November 28 Monday	<i>Lab/Recitation #8</i> Renal disease lecture and genetics lab Readings: <ul style="list-style-type: none"> • McConnell, Chapter 15; pp. 447-456, 470-479, 483-485 Web Resources: http://www.ncbi.nlm.nih.gov/omim http://www.ebi.ac.uk/gwas/ http://www.genecards.org/ http://www.ncbi.nlm.nih.gov/projects/SNP/ http://www.ncbi.nlm.nih.gov/projects/genome/guide/human/

November 29 Tuesday	<p>Obesity</p> <p>Readings:</p> <ul style="list-style-type: none"> • McConnell, Chapter 23; pp. 759-765 • Etiology and natural history of obesity-Up to Date • Pathogenesis of obesity-Up to Date <p>Lecturer: Ellen Demerath</p>
December 1 Thursday	<p>Diabetes mellitus</p> <p>Readings:</p> <ul style="list-style-type: none"> • McConnell, Chapter 13; pp. 386-388, 394-403, and 406-407 • Diagnosis of diabetes mellitus-Up to Date <p>Lecturer: Tang</p>
December 5 Monday	<p><i>Lab/Recitation #9</i></p> <p>Carbohydrate Absorption and Blood Glucose Measurement</p> <p>Term Paper Due</p>
December 6 Tuesday	<p>COPD</p> <p>Readings: McConnell, Chapter 10, pp. 278-282, 286-291</p> <p>Lecturer: Tang</p>
December 8 Thursday	<p>Alzheimer's disease</p> <p>Readings: McConnell, Chapter 19; pp. 597-605, 627-628</p> <p>NIH Statement on Alzheimer's Disease</p> <p>Lecturer: Tang</p>
December 12 Monday	<p><i>Lab/Recitation #10</i></p> <p>Spirometry & Pulmonary Functions</p>
December 13 Tuesday	<p>Examination 5: Other Chronic Disease Unit</p>

VII. Evaluation and Grading

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

A	4.000 – Represents achievement that is outstanding relative to the level necessary to meet course requirements
A-	3.667
B+	3.333
B	3.000 – Represents achievement that is significantly above the level necessary to meet course requirements
B-	2.667
C+	2.333
C	2.000 – Represents achievement that meets the course requirements in every respect
C-	1.667
D	1.000 – Represents achievement that is worthy of credit even though it fails to meet fully the course requirements

For additional information, please refer to:

<http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html>

Students will be evaluated through a 5 exams for each unit and a final term paper each worth 50 points.

<u>Examinations</u>	<u>Points</u>
Unit 1: General Pathophysiology	50
Unit 2: CVD	50
Unit 3: Cancer	50
Unit 4: Infections Disease	50
Unit 5: Chronic Disease	50
Term Paper	50
Total Points	300

Extra Credit: 10 points (1 point for each recitation worksheet handed in during the session)

Final grade will be assessed on a 100-point scale based on the following scale:

A	93-100%	B-	80-<83	D+	67-<70
A-	90-<93	C+	77-<80	D	63-<67
B+	87-<90	C	73-<77	D-	60-<63
B	83-<87	C-	70-<73	F	Below 60

The S/N option is available for this course. B- or better is required for an S.

Course Evaluation

The SPH will collect student course evaluations electronically using a software system called CourseEval: www.sph.umn.edu/courseeval. The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: www.sph.umn.edu/grades. All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

Incomplete Contracts

A grade of incomplete "I" shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an "I" requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student's college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: www.sph.umn.edu/grades.

University of Minnesota Uniform Grading and Transcript Policy

A link to the policy can be found at onestop.umn.edu.

VIII. Other Course Information and Policies

Grade Option Change (if applicable)

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at onestop.umn.edu.

Course Withdrawal

Students should refer to the Refund and Drop/Add Deadlines for the particular term at onestop.umn.edu for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Office of Admissions and Student Resources at sph-ssc@umn.edu for further information.

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.”

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>

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/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she 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/Policies/Education/Education/INSTRUCTORRESP.html>.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class—e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

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/Policies/Education/Education/MAKEUPWORK.html>.

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/Policies/Education/Education/STUDENTRESP.html>

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: <http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

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://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf

Disability Accommodations

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center Student Services is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DRC at 612-626- 1333 or drc@umn.edu to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, <https://diversity.umn.edu/disability/>

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>

The Office of Student Affairs at the University of Minnesota

The Office for Student Affairs provides services, programs, and facilities that advance student success, inspire students to make life-long positive contributions to society, promote an inclusive environment, and enrich the University of Minnesota community. Units within the Office for Student Affairs include, the Aurora Center for Advocacy & Education, Boynton Health Service, Central Career Initiatives (CCE, CDes, CFANS), Leadership Education and Development–Undergraduate Programs (LEAD-UP), the Office for Fraternity and Sorority Life, the Office for Student Conduct and Academic Integrity, the Office for Student Engagement, the Parent Program, Recreational Sports, Student and Community Relations, the Student Conflict Resolution Center, the Student Parent HELP Center, Student Unions & Activities, University Counseling & Consulting Services, and University Student Legal Service.

For more information, please see the Office of Student Affairs at <http://www.osa.umn.edu/index.html>

Academic Freedom and Responsibility: for courses that do not involve students in research

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.*

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

Student Academic Success Services (SASS): <http://www.sass.umn.edu>

Students who wish to improve their academic performance may find assistance from Student Academic Support Services. While tutoring and advising are not offered, SASS provides resources such as individual consultations, workshops, and self-help materials.

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