PubH 6341-Section 1
Epidemiologic Methods I
Fall 2014

Credits: 3
Meeting Days: Tuesday and Thursday
Meeting Time: 3:35 - 4:50pm
Meeting Place: Jackson Hall 2-137

Instructors: Pamela L. Lutsey, Ph.D., Assistant Professor
Susan M. Mason, Ph.D., Assistant Professor

Office Address: West Bank Office Building (WBOB)
Division of Epidemiology and Community Health
School of Public Health
1300 S. 2nd St. Suite 300
Minneapolis, MN 55454

Office Phone: Dr. Lutsey: 612-624-5812
Dr. Mason: 612-624-9556
Fax: 612-624-0315
E-mail: Dr. Lutsey: lutsey@umn.edu
Dr. Mason: smmason@umn.edu

Office Hours: Drs. Lutsey and Mason will hold regular office hours on Wednesdays from 4:00-5:00 PM in Moos-T 2-633. Additional office hours, held in WBOB, are also available by appointment.

Teaching Assistant: Mary Rooney
Email: roone166@umn.edu
Office Hours: Tuesdays 12:00-1:00 PM in the SPHere*

*NOTE: If you do not have SPHere card-key access (i.e. you are not a School of Public Health student), you will need to inform the TA ahead of time to let you in.

I. Course Description

Epidemiologic Methods I focuses on research methodology. The course introduces study designs applied to human populations, including randomized trials and four types of observational studies (cohort, case-control, cross-sectional, ecological). Because cause-and-effect relations are at the heart of epidemiologic research, numerous related topics are introduced in Epidemiologic Methods I including causal inference, bias, and effect modification.
Acknowledgments

The contents of PUBH 6341 have been developed with the contributions of numerous instructors. Drs. Shalini Kulasingam, Pamela Lutsey and Susan Mason currently teach this course, and have been involved with the majority of recent content and modifications. Former faculty/instructors, including Drs. Bernard Harlow, Logan Spector, and Andrew Flood, all had roles in either the conceptual development or actual content of the current course, and are acknowledged for their contributions.

II. Course Prerequisites

Epidemiologic Methods I is a 3-credit, graduate level course. It is the first of a three-semester sequence for graduate-level students who intend to major in epidemiology.

III. Course Goals and Objectives

By the end of the course, students will be able to: 1) design basic epidemiologic studies; 2) analyze epidemiologic data using tabular methods; and 3) critically review epidemiologic papers.

IV. Methods of Instruction and Work Expectations

Most of the instruction will be through lectures. Please feel free to raise your hand to ask questions during lectures if you need help understanding an unclear point.

Some class time will be devoted to in-class exercises. Students are expected to come to class having read the assigned readings and reviewed the notes for the class. Students are expected to turn in assignments on time and take tests at the scheduled times. Exceptions to deadlines will be made for extreme situations (i.e., medical or family emergencies) on a case-by-case basis.

V. Out-of-Class Communication

We will use email as the main method for out-of-class communication. You are expected to check your email regularly. The course instructor and TAs will read email from students one time per day. Anticipate that it will take 24 hours (or slightly more) to get an email reply from the course instructor or TAs Monday through Friday. Emails sent over the weekend may not receive a reply until Monday.

VI. Course Web Site

The course web site can be accessed by going to My U Portal at http://myu.umn.edu. At this site, sign in using your UMN student email ID and password. Once in the site, click on “My Courses”. If you are registered for this course, a link to the Moodle site for “PubH 6341 – Section 001 – Fall 2014” should be listed. Click it and you are in!

VII. Web Site Prerequisites and Responsibilities

Students access Moodle course sites via a web browser such as Firefox or Internet Explorer. Please go to https://umconnect.umn.edu/moodleorientation if you would like to watch an online orientation explaining how to use Moodle. Information on this link will also allow you to make sure your computer is set up correctly to use supported hardware and software.

Any students who do not have access to a personal computer and printer with these minimum requirements can use the computers and printers available in SPHere (Mayo) or the Biomedical Library (Diehl Hall).

If you have trouble accessing the site, scroll down to the “Quick links for students” on the course web site or contact the 1-Help Technology Helpline at 612-301-4357 or help@umn.edu.
VIII. Homework Assignments (for due dates, see calendar)

Homework #1: Measures of Disease Frequency
Homework #2: Measures of Disease Impact and Association
Homework #3: Experimental Studies
Homework #4: Case-Control Studies
Homework #5: Selection and Information Bias
Homework #6: Confounding

IX. Homework Policy

Students are encouraged to work together on their homework assignments if they wish. However, all assignments should represent each student’s independent, final product. In other words, students may discuss with each other how to answer questions, but they must formulate their own unique responses. Students turning in homework assignments where graders cannot determine the original author will receive scores of 0. Please show all calculations.

Homework is due at the beginning of class on the due date, and must be submitted via Moodle.

X. Guest Lecture Questions (for due dates, see calendar)

Students are assigned readings for each guest lecture. Prior to the guest lecture, students are to submit 1 question about the reading content via Moodle.

XI. Course Text and Readings

There is one required text for this course:

XII. Course Outline/Weekly Schedule

<table>
<thead>
<tr>
<th>Tuesday, September 2, 2014</th>
<th>Class 1 / Overview; History of Epidemiology</th>
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<tbody>
<tr>
<td>Instructor: Dr. Mason</td>
<td>Required reading: Chapter 1</td>
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<thead>
<tr>
<th>Thursday, September 4, 2014</th>
<th>Class 2 / Descriptive Epidemiology</th>
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<tbody>
<tr>
<td>Instructor: Dr. Mason</td>
<td>Required reading: Chapter 5</td>
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<tr>
<td>Due Today: Student Questionnaire</td>
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<thead>
<tr>
<th>Tuesday, September 9, 2014</th>
<th>Class 3 / Prevalence and Incidence</th>
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<tbody>
<tr>
<td>Instructor: Dr. Lutsey</td>
<td>Required reading: Chapter 2</td>
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<tr>
<td>Assigned: Homework #1</td>
<td></td>
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<tr>
<td>Date</td>
<td>Class</td>
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<tr>
<td>Thursday, September 11, 2014</td>
<td>Class 4 / Overview of Study Design</td>
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<td>Tuesday, September 16, 2014</td>
<td>Class 5 / Measures of Disease Association</td>
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<td>Thursday, September 18, 2014</td>
<td>Class 6 / Measures of Disease Impact</td>
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<td>Tuesday, September 23, 2014</td>
<td>Class 7 / Causation</td>
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<td>Thursday, September 25, 2014</td>
<td>Class 8 / Sources of Epi Data</td>
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<td>Tuesday, September 30, 2014</td>
<td>Class 9 / EXAM I</td>
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<td>Thursday, October 2, 2014</td>
<td>Class 10 / Experimental Studies – Part I</td>
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<td>Date</td>
<td>Class</td>
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<tr>
<td>October 7, 2014</td>
<td>Class 11 / Experimental</td>
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<td></td>
<td>Studies - Part II</td>
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<td></td>
<td>Studies – Guest Lecturer</td>
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<tr>
<td>October 14, 2014</td>
<td>Class 13 / Cohort Studies</td>
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<td></td>
<td>– Part I</td>
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<tr>
<td>October 16, 2014</td>
<td>Class 14 / Cohort Studies</td>
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<tr>
<td></td>
<td>– Part II</td>
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<tr>
<td>October 21, 2014</td>
<td>Class 15 / Cohort Studies</td>
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<td></td>
<td>– Guest Lecturer</td>
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<tr>
<td>October 23, 2014</td>
<td>Class 16 / Case-Control</td>
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<td></td>
<td>Studies – Part I</td>
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<tr>
<td>October 28, 2014</td>
<td>Class 17 / Case-Control</td>
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<td></td>
<td>Studies – Part II</td>
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<tr>
<td>Date</td>
<td>Class/Exams</td>
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<tr>
<td>Thursday, October 30, 2014</td>
<td>Class 18 / Case-Control Studies – Guest Lecturer</td>
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<td>Tuesday, November 4, 2014</td>
<td>Class 19 / Cross-Sectional and Ecologic Studies</td>
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<td>Thursday, November 6, 2014</td>
<td>Class 20 / EXAM 2</td>
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<td>Tuesday, November 11, 2014</td>
<td>Class 21 / Systematic Error – Selection Bias</td>
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<td>Thursday, November 13, 2014</td>
<td>Class 22 / Systematic Error – Information Bias</td>
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<td>Tuesday, November 18, 2014</td>
<td>Class 23 / Systematic Error - Validity and Reliability</td>
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<tr>
<td>Thursday, November 20, 2014</td>
<td>Class 24 / Systematic Error - Confounding</td>
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Course Outline/Weekly Schedule, continued

**Tuesday, November 25, 2014**
Class 25 / Standardization  
**Instructor:** Dr. Lutsey  
**Required reading:** Chapter 3 (pp 71-74)  
**Assigned:** Homework #6

**Thursday, November 27, 2014**  
No Class - THANKSGIVING

**Tuesday, December 2, 2014**
Class 26 / Outbreak Investigation – Guest Lecturer  
**Instructor:** Dr. Kirk Smith  
*Due today:* Guest Lecture Question

**Thursday, December 4, 2014**
Class 27 / Effect Measure Modification  
**Instructor:** Dr. Mason  
**Required reading:** Chapter 13  
*Due Today:* Homework #6

**Tuesday, December 9, 2014**
Class 28 / The “Big Picture”  
**Instructor:** Drs. Lutsey and Mason  
**Required reading:** Chapter 14 (pp 363-374)  
**Other:** Practice final exam available

**Tuesday, December 16, 2014**  
FINAL EXAM: 10:30am-12:30 pm (Location TBD)

**XIII. Evaluation and Grading**

Epidemiology majors must take this course A/F; others may choose to take the course S/N, but should consult the graduate studies coordinator in their department. Students may change grading options during the initial registration period or during the first two weeks of the semester. The grading option may not be changed after the second week of the term. A grade of C- or higher must be obtained in order to receive an S under the S/N system.

A minimum grade of B- must be earned in order to enroll in Epidemiologic Methods II (PubH 6342). Epidemiology majors must earn a minimum grade of B- in Epidemiologic Methods I and other core courses (PubH 6342, 6343, 6344, 6450 and 6452) in order to graduate.

Extensive efforts are made to ensure that the homework and exams are graded consistently. If after reviewing your graded homework or exam you are dissatisfied with the grading, in order to request a grade change, you must submit the paper copy together with a written statement of why
you think the homework or exam question should have been graded differently. Please be aware that if you submit such a request, your entire homework or exam may be reviewed and re-graded either up or down.

**Grading Basis:**

- Homework (15%): 6 homework assignments (2.5 pts each)
- Guest Lecture Questions (2%): 1 per each of 4 guest lectures (0.5 pt each)
- Exam 1 (23%): First third of the course
- Exam 2 (26%): Cumulative with emphasis on material covered in middle third
- Exam 3 (34%): Cumulative with an emphasis on material covered in final third

**Final grades will be assigned as follows:**

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>100.0 - 92.5</td>
<td>A</td>
</tr>
<tr>
<td>90.0 - 92.4</td>
<td>A-</td>
</tr>
<tr>
<td>87.5 - 89.9</td>
<td>B+</td>
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<tr>
<td>82.5 - 87.4</td>
<td>B</td>
</tr>
<tr>
<td>80.0 - 82.4</td>
<td>B-</td>
</tr>
<tr>
<td>77.5 - 79.9</td>
<td>C+</td>
</tr>
<tr>
<td>72.5 - 77.4</td>
<td>C</td>
</tr>
<tr>
<td>70.0 - 72.4</td>
<td>C-</td>
</tr>
<tr>
<td>67.5 - 69.9</td>
<td>D+</td>
</tr>
<tr>
<td>62.5 - 67.4</td>
<td>D</td>
</tr>
<tr>
<td>60.0 - 62.4</td>
<td>D-</td>
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<tr>
<td>&lt; 60</td>
<td>F</td>
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</tbody>
</table>

Students are expected to turn in assignments on time and take tests at the scheduled times. Exceptions to deadlines will be made for extreme situations (i.e., medical or family emergencies) on a case-by-case basis.

**Course Evaluation**

The SPH will collect student course evaluations electronically using a software system called CoursEval: [www.sph.umn.edu/courseval](http://www.sph.umn.edu/courseval). 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](http://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 (possibly 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.

XIV. Other Course Information and Policies

Grade Option Change:
For full-semester courses, students may change their grade option 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 to create 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 to create 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 to 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. The University therefore 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.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

* 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.