

# School of Public Health

## Syllabus and Course Information



UNIVERSITY OF MINNESOTA  
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### PubH 6341-Section 2 Epidemiologic Methods I Fall 2016

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**Credits:** 3  
**Meeting Days:** Tuesday and Thursday  
**Meeting Time:** 4:15pm-5:30 pm  
**Meeting Place:** Mayo C231  
**Instructors:** Shalini Kulasingam, PhD Associate Professor  
**Office Address:** West Bank Office Building (WBOB)  
Division of Epidemiology and Community Health  
School of Public Health  
1300 S. 2<sup>nd</sup> St. Suite 300  
Minneapolis, MN 55454  
**Office Phone:** 612-624-7554  
**Fax:** 612-624-0315  
**E-mail:** kulas016@umn.edu

**Office Hours:** I will hold regular office hours on Mondays from 4 to 5pm in Moos 2-639. Additional office hours, held in my office at WBOB, are also available by appointment

**Teaching Assistant:** **Katie Tastad:** [reinh121@umn.edu](mailto:reinh121@umn.edu)

**Office Hours:** Thursdays from 11 to 12pm 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.*

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## **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. Pamela Lutsey, Susan Mason and Shalini Kulasingam currently teach this course, and have developed the majority of recent content. 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. Course Text and Readings**

There is one required text for this course:

Essentials Of Epidemiology In Public Health. Ann Aschengrau and George R. Seage. 3<sup>rd</sup> Edition. Published by Jones and Bartlett (<http://www.jbpub.com>). Copyright 2013

## VI. Course Outline/Weekly Schedule

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| <p><b>Tuesday, September 6, 2016</b><br/><b>Class 1 / Overview; History of Epidemiology</b><br/>Required reading: Chapter 1<br/><i>Assigned: Sources of Epidemiologic Data exercise; Student Questionnaire</i></p>   |
| <p><b>Thursday, September 8, 2016</b><br/><b>Class 2 / Descriptive Epidemiology &amp; Sources of Epidemiologic Data</b><br/>Required reading: Chapter 4<br/><i>Assigned: "Math Terminology Refresher"</i><br/><b><i>Due today*:</i> Sources of Epidemiologic Data exercise</b></p> |
| <p><b>Tuesday, September 13, 2016</b><br/><b>Class 3 / Prevalence and Incidence</b><br/>Required reading: Chapter 2<br/><i>Assigned: Homework #1</i><br/><b><i>Due today*:</i> Student Questionnaire; Review "Math Terminology Refresher"</b></p>                                  |
| <p><b>Thursday, September 15, 2016</b><br/><b>Class 4 / Overview of Study Design</b><br/>Required reading: Chapter 6</p>   |
| <p><b>Tuesday, September 20, 2016</b><br/><b>Class 5 / Measures of Disease Association</b><br/>Required reading: Chapter 3 (pp.59-70)<br/><b><i>Due today*:</i> Homework #1</b></p>  |
| <p><b>Thursday, September 22, 2016</b><br/><b>Class 6 / Measures of Disease Impact</b><br/>Required reading: None<br/><i>Assigned: Homework #2</i></p>   |

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| <p><b>Tuesday, September 27, 2016</b><br/> <b>Class 7 / Measures of Disease - Synthesis</b><br/> <u>Required reading:</u> None<br/> <i>Available today: Practice exam #1</i></p>   |
| <p><b>Thursday, September 29, 2016</b><br/> <b>Class 8 / Causation</b><br/> <u>Required reading:</u> Chapter 15<br/> <b><i>Due today*:</i> Homework #2</b></p>   |
| <p><b>Tuesday, October 4, 2016</b><br/> <b>Class 9 / EXAM I</b></p>  |
| <p><b>Thursday, October 6, 2016</b><br/> <b>Class 10 / Experimental Studies – Part I</b><br/> <u>Required reading:</u> Chapter 7</p>   |
| <p><b>Tuesday, October 11, 2016</b><br/> <b>Class 11 / Experimental Studies - Part II</b><br/> <u>Required reading:</u> None<br/> <i>Assigned: Homework #3</i></p>   |
| <p><b>Thursday, October 13, 2016</b><br/> <b>Class 12 / Experimental Studies – Guest Lecturer</b><br/> <u>Instructor:</u> Dr. Nancy Sherwood<br/> <u>Required reading:</u> Sherwood et al. NET-Works: Linking families, communities and primary care to prevent obesity in preschool-age children. Contemporary Clinical Trials. 2013;36:544–554<br/> <b><i>Due today*:</i> Guest lecture question</b></p> |
| <p><b>Tuesday, October 18, 2016</b><br/> <b>Class 13 / Cohort Studies – Part I</b><br/> <u>Required reading:</u> Chapter 8<br/> <b><i>Due today*:</i> Homework #3</b></p>  |
| <p><b>Thursday, October 20, 2016</b><br/> <b>Class 14 / Cohort Studies – Guest Lecturer</b><br/> <u>Instructor:</u> Dr. Aaron Folsom<br/> <u>Required reading:</u> Folsom AR et al., <i>Arch Intern Med</i> 2000; 160:2117-2128.<br/> <b><i>Due today*:</i> Guest lecture question</b></p>   |
| <p><b>Tuesday, October 25, 2016</b><br/> <b>Class 15 / Cohort Studies Part II</b><br/> <u>Instructor:</u> Dr. Pam Lutsey</p>   |

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| <p><u>Required reading:</u> None</p>   |
| <p><b>Thursday, October 27, 2016</b><br/> <b>Class 16 / Case-Control Studies – Part I</b><br/> <u>Required reading:</u> Chapter 9</p>  |
| <p><b>Tuesday, November 1, 2016</b><br/> <b>Class 17 / Case-Control Studies – Part II</b><br/> <u>Required reading:</u> None<br/> <i>Assigned: Homework #4</i></p>   |
| <p><b>Thursday, November 3, 2016</b><br/> <b>Class 18 / Case-Control Studies – Guest Lecturer</b><br/> <u>Instructor:</u> DeAnn Lavzovich<br/> <u>Required reading:</u> Lazovich et al. Melanoma risk in relation to sunscreen and other sun protection methods. Cancer Epidemiol Biomarkers Prev 2011;20:2583-2593.<br/> <u>Optional reading:</u> Leslie et al. Sunscreen Use and the Risk for Melanoma: A Quantitative Review. Ann Intern Med. 2003;139:966-978.<br/> <i>Available today: Practice exam #2</i><br/> <b><i>Due today*:</i> Guest lecture question</b></p> |
| <p><b>Tuesday, November 8, 2016</b><br/> <b>Class 19 / Cross-Sectional and Ecologic Studies</b><br/> <u>Required reading:</u> None<br/> <b><i>Due today*:</i> Homework #4</b></p>  |
| <p><b>Thursday, November 10, 2016</b><br/> <b>Class 20 / EXAM 2</b></p>  |
| <p><b>Tuesday, November 15, 2016</b><br/> <b>Class 21 / Systematic Error – Selection Bias</b><br/> <u>Required reading:</u> Chapter 10 (pp 265-275)</p>  |
| <p><b>Thursday, November 17, 2016</b><br/> <b>Instructor: TBD</b><br/> <b>Class 22 / Systematic Error – Information Bias</b><br/> <u>Required reading:</u> Chapter 10 (pp 276-292)<br/> <u>Assigned:</u> Homework #5</p>   |
| <p><b>Tuesday, November 22, 2016</b><br/> <b>Class 23 / Systematic Error - Validity and Reliability</b><br/> <u>Required reading:</u> Chapter 16</p>   |
| <p><b>Thursday, November 24, 2016</b><br/> <b>No Class! Happy Thanksgiving!</b></p>  |

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| <p><b>Tuesday, November 29, 2016</b></p> <p><b>Class 24 / Systematic Error – Confounding</b></p> <p><u>Required reading:</u> Chapter 11</p> <p><i>Assigned: Homework #6</i></p> <p><b><i>Due today*: Homework #5</i></b></p>  |
| <p><b>Thursday, December 1, 2016</b></p> <p><b>Class 25 / Standardization</b></p> <p><u>Required reading:</u> Chapter 3 (pp 71-74)</p>  |
| <p><b>Tuesday, December 6, 2016</b></p> <p><b>Class 26 / Effect Measure Modification</b></p> <p><u>Required reading:</u> Chapter 13</p> <p><i>Available today: Practice final exam</i></p> <p><b><i>Due today*: Homework #6</i></b></p>   |
| <p><b>Thursday, December 8, 2016</b></p> <p><b>Class 27 / Outbreak Investigation - Guest Lecture</b></p> <p><u>Instructor:</u> Dr. Kirk Smith</p> <p><u>Required reading:</u> Kemble et al. <i>Clinical Infectious Diseases</i>. 2013;57:648-654.</p> <p><b><i>Due today*: Guest lecture question</i></b></p> |
| <p><b>Tuesday, December 13, 2016</b></p> <p><b>Class 28 / The “Big Picture”</b></p> <p><u>Required reading:</u> Chapter 14 (pp 363-374)</p>   |
| <p><b>FINAL EXAM: Tuesday, December 20th TBD</b></p>  |

*\*Assignments must be submitted before the beginning of class on the day they are due*

## VII. 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, you may request a grade change by submitting 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 question for each of 4 guest lectures (0.5 pt each)
- Sources of Epidemiologic Data Exercise (1%): 1 point
- Exam 1 (23%): First third of the course
- Exam 2 (26%): Cumulative with emphasis on material covered in middle third
- Exam 3 (33%): Cumulative with an emphasis on material covered in final third

### Late Policies

Homeworks: If the homework answer key has been posted no credit will be given. If the key has not yet been posted, assignments <24 hours late will receive 80% of points earned; assignments ≥24 hours late (but prior to answer key posting) will receive 50% of points earned.

Guest Lecture Questions: Late guest lecture questions will receive no points.

### Final grades will be assigned as follows:

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|--------------|----|
| 100.0 - 92.5 | A  |
| 90.0 - 92.4  | A- |
| 87.5 - 89.9  | B+ |
| 82.5 - 87.4  | B  |
| 80.0 - 82.4  | B- |
| 77.5 - 79.9  | C+ |
| 72.5 - 77.4  | C  |
| 70.0 - 72.4  | C- |
| 67.5 - 69.9  | D+ |
| 62.5 - 67.4  | D  |
| 60.0 - 62.4  | D- |
| < 60         | F  |

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.

- A 4.000 - Achievement is outstanding relative to the level necessary to meet course requirements
- A- 3.667
- B+ 3.333
- B 3.000 - Achievement is significantly above the level necessary to meet course requirements
- B- 2.667
- C+ 2.333

- C 2.000 - Achievement that meets the course requirements in every respect
- C- 1.667
- D+ 1.333
- D 1.000 - Achievement that is worthy of credit even though it fails to meet fully the course requirements
- S ----- - Achievement is satisfactory, equivalent to a C- or better.

**For additional information, please refer to:**

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

### **Course Evaluation**

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

### **Course Withdrawal**

Students should refer to the Refund and Drop/Add Deadlines for the particular term at [onestop.umn.edu](http://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](mailto: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](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. For this reason, 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 includes: 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](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](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. Disability Services (DS) 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 DS at 612-626-1333 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.

**OR:**

**Academic Freedom and Responsibility, for courses that 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 and conduct relevant research. 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.\* When conducting research, pertinent institutional approvals must be obtained and the research must be consistent with University policies.

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".

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