PHYSICS 1302W.500 (4 credits) - Spring 2016

Introductory Physics for Science and Engineering II

Instructor: Martin Greven
Office: 218 Physics and Nanotechnology (PAN)
E-mail: greven@physics.umn.edu

Due to the large class size, e-mail is impractical and should be used only for emergencies. In all other cases, please see the instructor after class or during office hours.

Lectures: Mo, Tu, We, Fr (16:40 - 17:30) in Willey 125. Note that there is no permanent lecture on Fridays. The Friday class time is reserved for quizzes and additional or make-up lectures, as announced.

Instructor Office Hours: Mo and We 10:10-11:00, or by appointment.

Discussion and Lab Schedule, TA Office Hours: see below.

Required course materials:
Text Book: Eric Mazur, Principles & Practice of Physics, Volume 2, available at the bookstore. Note that each volume consists of two books: Principles, which is the main text, and Practices, which provides reviews and worked/homework problems.

MasteringPhysics: When you buy the book from the bookstore, access is provided to the MasteringPhysics website, over which you will complete your homework and have access to other materials. [Note: If you were enrolled in Physics 1301 last Fall semester, your MasteringPhysics account for 1301 is still valid and you do not need a new access code]. To sign up to MasteringPhysics:

(1) Go to http://www.pearsonmylabandmastering.com/northamerica/masteringphysics
(2) Choose “Student” and correct location, “In US or Canada”.
(3) Choose “Yes, I have a course ID”, filling in MPGREVEN28306. Note that you must use this ID to register for our particular lecture section.
(4) Choose “Yes, I have an access code”. Note that if you do not have an access code, you will have to purchase access to MasteringPhysics and the e-book online or from the book store.
(5) Fill in the access code and choose, as your login name, your U of M X.500 ID (unless you already have an account with Pearson.)

Laboratory Manual: The manual is posted on course website.

Laboratory Journal: Quadrille-ruled, hardbound laboratory notebook (e.g., U of MN 2077S notebook, available at the bookstore).

Calculator: A cheap, scientific calculator is required. Do not use graphing calculators.
**Clickers:** We will be using ‘iClicker2’ for in-class response system. You must purchase the remote for this system at the Bookstore. These are the same clickers used by introductory chemistry and biology classes and in Physics 1301 in Fall 2015, so you only need one clicker for all of these classes. The in-class questions will be worth 2 points for a correct answer, 1 point for an incorrect answer, and 0 points for no answer.

**Optional Supplemental Texts:** Calculus will be used extensively in this course. If it is a few years since you have taken a calculus course, it would be a good idea to re-read the introductory parts of your old calculus textbook. Several books have been written that offer help in the calculus topics relevant to introductory physics, for example: *How to Ace Calculus* by Adams, Thompson, and Hass, published by Freeman and Company; *The Competent Problem Solver for Introductory Physics: Calculus Version*, University of Minnesota, School of Physics and Astronomy.

**Class Webpage:**
(goto http://www.physics.umn.edu/classes/ and choose 1302W.500): Please visit the class webpage regularly for official announcements regarding lectures, lab, homework, quizzes, and the final exam. Solutions to the quizzes will be posted here after they are graded. Log in using your University X.500 Username and password.

**Course Overview:**
Welcome to Physics 1302W! This is the second semester of a calculus-based introduction to physics principles, with emphasis on electricity and magnetism. The course is intended for those students who will go on to study one of the physical sciences or an engineering discipline. We will learn how to think carefully and quantitatively about the world around us.

The beauty and attraction of physics (for those, like you, who are lucky enough to study it), is that the mastery and application of a few simple concepts provides a wealth of information about the physical universe. It is not sufficient, however, to merely memorize these principles – but rather, we will dig in and use these concepts to quantitatively solve problems about our world.

In fact, solving word problems will seem at times to be what this course is all about. But the problems are simply examples that illustrate the correct usage of the physics concepts we will discuss. In order to obtain the maximum benefit from this class, you should read each of the assigned chapters prior to the lectures. Each chapter contains a set of worked out problems. You should, when reading the chapter, cover up the solutions and attempt the problems first on your own. Compare your answer to that in the textbook, and if they differ – try it again right away! The more problems you work out, the better your performance on exams, and the more you will get out of the class.

Working on problems with other students in a study group can be very beneficial. However, consulting with your fellow students during a quiz or final exam is what is commonly referred to as Cheating. Therefore, it is also imperative that you master the skills necessary to solve problems on your own. Do not be frustrated or deterred if you struggle with certain problems. This is all part of the learning process, and the knowledge that results from hard struggle is dear indeed.
**Laboratory Session and Laboratory Reports:**
This course satisfies University requirements as a laboratory science class and as a writing intensive course. Therefore you **must** pass the laboratory to receive a passing grade in the course. Passing the laboratory means receiving 60% of the possible score. The laboratory grade will be based on pre-lab problems, well thought out predictions, correctly written laboratory reports, and properly handled laboratory notebook.

You will write a total of four laboratory reports. The specific part of the laboratory for which you will write a report will be assigned to you by your instructor at the end of each laboratory topic (about every two-three weeks). Reports should be about 4 typed pages, including all necessary predictions, graphs, data tables, and calculations. Reports must be given to your laboratory instructor for grading no more than one week after they are assigned. Late reports will not be accepted. Graded reports will be returned to you no later than your next laboratory meeting. You will be allowed to resubmit the first report to achieve a higher grade. It must be given to your laboratory instructor within one week of the time the original report was returned to you.

Lab data are taken cooperatively, but you are responsible for writing your own reports. Copying lab reports can result in a failing grade for the course. Details of the laboratory grading scheme are in your laboratory manual and will be explained by your TA.

Read the relevant portions of the lab manual before attending lab. Each lab has several components. Your TA will tell you which components to prepare each week. All the laboratory problems have sections called “Prediction” and “Warm-Up”. Give your TA the predictions and the answers to the “Warm-Up” questions two days before your scheduled lab session.

Failure to participate in one laboratory will result in -50% of the grade of the following lab report (if you miss 2 labs, your grade will be zero). Since the laboratory involves teamwork, no laboratory make-up will be allowed except in situations officially recognized by the University. In that case, the laboratory work must be made up by arrangement with your TA before your next scheduled laboratory period.

**Discussion:**
Participate in problem sessions on Thursdays ready to work in groups on a problem that will be handed out in class. Attendance at problem-solving sessions is required. If you have an excused absence, you must discuss with your TA making up the missed work. If you are late more than 10 minutes, you are considered absent. Your score on the next exam group problem will be reduced by half for each unexcused problem-solving session absence. If you are more than 10 minutes late for an Exam Group Problem, you will need to do the group problem by yourself.

**Homework:**
Weekly homework assignments will be posted on the class website. Problems will be taken from Mazur’s Principles & Practice of Physics, Volume 2. Your solutions to the problem set are due by the specified time. You will receive ‘participation points’ for handing in your assignment, but the homework will not be individually graded. However, on each of the four in-class exams, one of the problems will be very similar to
a problem from a prior homework assignment. Thus, a mastery of the material in the homework problems will translate into a better performance on the quizzes.

**Quizzes and Final:**
There are four quizzes throughout the semester. The dates for the quizzes are in the syllabus. There will be no make-up quizzes. If you have a University approved reason to miss a quiz, please talk with the instructor. Equation sheet and calculator policy will be announced prior to the quizzes.

The Thursday sections of the quizzes will be a group problem, done in class. It will account for 25% of your total grade for that quiz. The Friday sections of the quizzes (75% of the total quiz grade) will be done individually.

The final exam is common to all 1302 sections, and will be given on Thursday, May 12, 2016 from 6:30 – 9:30 PM, in a room to be announced. If you have a University approved reason to miss this final, there will be a make-up exam. You must register with the physics office to take the make-up exam. The final exam covers the entire material of the semester. Equation sheet and calculator policy will be announced prior to the exam.

As specified by University policy, make-ups for in-class quizzes will be given only in the event of conflicts with scheduled activities of official University organizations, religious holidays, and verifiable illnesses as prescribed by University regulations. A make-up final exam will be given for students with conflicts of these types, or for students that have three final examinations in a 16-hour period. Requests for make-ups for reasons other than those specified by University policy cannot be honored.

**Announcements:**
It may be occasionally necessary to modify the course schedule, including the dates of quizzes. Students are responsible for all announcements made during the lecture, discussion section or laboratory. Every announcement will be posted on the webpage. Missing an announcement is not an acceptable excuse for missing a quiz or a course-related deadline. It is the responsibility of any student missing a lecture to determine what course material and/or announcements were missed.

**Open-Door Policy:**
If any difficulties or problems arise in this course that interfere in any way with your learning or optimum performance, please contact the instructor or your TAs. We will do our best to deal with problems promptly and effectively.

**Grading:**
Your Final Score for the class will be calculated as follows: In class participation with Clickers: 5%; Homework: 5%; Three best quizzes: 45%; Lab: 15%; Final Exam: 30%.

Final grades for all 1302 sections are coordinated among all instructors. We won’t know anything about curving until after all grades, including final exam grades, are assembled for all sections.

The letter grade for the course will be assigned according to the following approximate scale: A, A- (84 - 100), B+, B, B- (68 - 83), C+, C, C- (53 - 67), D+, D, D- (40 - 52), F (below 40 or a lab grade below 60%). The exact dividing lines will be determined later.
Discussion, Lab and Test Schedule:

**Group Quizzes (tentative):** Feb. 11, Mar. 3, Mar. 31 and Apr. 21 (Thursdays in the Discussion Sessions)

**In-lecture Quizzes (tentative):** Feb. 12, Mar. 4, Apr. 1 and Apr. 22 (Fridays, Location: TBD)

**Final Exam:** Thursday, May 12, 6:30-9:30 PM. Location: TBD.

**Discussions and Labs (please look up rooms on my U):**

<table>
<thead>
<tr>
<th>DISC</th>
<th>DISC SCHEDULE</th>
<th>LAB</th>
<th>LAB SCHEDULE</th>
<th>TA</th>
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<tbody>
<tr>
<td>501</td>
<td>03:35pm-04:25pm TH</td>
<td>502</td>
<td>12:20pm-02:15pm W</td>
<td>Kexin Feng</td>
</tr>
<tr>
<td>503</td>
<td>03:35pm-04:25pm TH</td>
<td>504</td>
<td>12:20pm-02:15pm W</td>
<td>Mohammad Wadud</td>
</tr>
<tr>
<td>505</td>
<td>03:35pm-04:25pm TH</td>
<td>506</td>
<td>12:20pm-02:15pm TH</td>
<td>Michael Sammon</td>
</tr>
<tr>
<td>507</td>
<td>03:35pm-04:25pm TH</td>
<td>508</td>
<td>12:20pm-02:15pm TH</td>
<td>Fulya Koc</td>
</tr>
<tr>
<td>509</td>
<td>03:35pm-04:25pm TH</td>
<td>510</td>
<td>04:40pm-06:35pm TH</td>
<td>Kenny Lau</td>
</tr>
<tr>
<td>511</td>
<td>03:35pm-04:25pm TH</td>
<td>512</td>
<td>04:40pm-06:35pm TH</td>
<td>Sajna Hameed</td>
</tr>
<tr>
<td>513</td>
<td>03:35pm-04:25pm TH</td>
<td>514</td>
<td>06:50pm-08:45pm TH</td>
<td>Hanteng Wang</td>
</tr>
<tr>
<td>515</td>
<td>03:35pm-04:25pm TH</td>
<td>516</td>
<td>06:50pm-08:45pm TH</td>
<td>Bo Xiong</td>
</tr>
<tr>
<td>520</td>
<td>04:40pm-05:30pm TH</td>
<td>521</td>
<td>12:20pm-02:15pm F</td>
<td>Fulya Koc</td>
</tr>
<tr>
<td>522</td>
<td>04:40pm-05:30pm TH</td>
<td>523</td>
<td>12:20pm-02:15pm F</td>
<td>Mohammad Wadud</td>
</tr>
<tr>
<td>524</td>
<td>04:40pm-05:30pm TH</td>
<td>525</td>
<td>06:50pm-08:45pm M</td>
<td>Hanteng Wang</td>
</tr>
<tr>
<td>526</td>
<td>04:40pm-05:30pm TH</td>
<td>527</td>
<td>06:50pm-08:45pm M</td>
<td>Kexin Feng</td>
</tr>
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<td>528</td>
<td>04:40pm-05:30pm TH</td>
<td>529</td>
<td>06:50pm-08:45pm W</td>
<td>Bo Xiong</td>
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<tr>
<td>530</td>
<td>04:40pm-05:30pm TH</td>
<td>531</td>
<td>06:50pm-08:45pm W</td>
<td>Michael Sammon</td>
</tr>
<tr>
<td>532</td>
<td>04:40pm-05:30pm TH</td>
<td>533</td>
<td>02:30pm-04:25pm TH</td>
<td>Alexey Zinger</td>
</tr>
<tr>
<td>534</td>
<td>04:40pm-05:30pm TH</td>
<td>535</td>
<td>02:30pm-04:25pm TH</td>
<td>Zachary Anderson</td>
</tr>
</tbody>
</table>

**TA Office Hours:**
TAs hold office hours in Williamson 150 (entrance near front office) beginning the second week of classes. The schedule will be posted outside of Williamson 150.
## CLASS SCHEDULE (tentative)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject</th>
<th>Chapter</th>
<th>Lab problems</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 19-22</td>
<td>Charge/Coulomb’s Law</td>
<td>22</td>
<td>Concept Test</td>
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<td>2</td>
<td>Jan. 25-29</td>
<td>E-Field/Dipoles</td>
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<td>I.1,2 E-field vectors</td>
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<td>3</td>
<td>Feb. 1-5</td>
<td>E-Field Lines/Flux/Gauss’ Law</td>
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<td>I.3-5 E-force</td>
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<td>4</td>
<td>Feb. 8-12</td>
<td><strong>Quiz 1</strong> Gauss’ Law/E-potential/ Potential Energy</td>
<td>24, 25</td>
<td>Review</td>
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<td>5</td>
<td>Feb. 15-19</td>
<td>Potential Difference/ Capacitors</td>
<td>25, 26</td>
<td>II. 1-4 E-field/potential</td>
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<td>6</td>
<td>Feb. 22-26</td>
<td>Capacitor/Dielectric/ Batteries</td>
<td>26</td>
<td>III.1 Capacitor energy</td>
</tr>
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<td>7</td>
<td>Feb. 29-Mar. 4 <strong>Quiz 2</strong></td>
<td>Current/DC circuits/ Kirchhoff’s Laws</td>
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<td>III.2-4 Capacitors</td>
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<td>8</td>
<td>Mar. 7-11</td>
<td>Kirchhoff’s Laws/ RC circuits (not in Mazur)</td>
<td>31</td>
<td>IV. 1-3,8 Simple circuits</td>
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<tr>
<td>9</td>
<td>Mar. 14-18</td>
<td><strong>Spring Break !</strong></td>
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<tr>
<td>10</td>
<td>Mar. 21-25</td>
<td>Magnetism/Magnetic force (Chap 27)</td>
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<td>IV. 9,10 Kirchhoff</td>
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<td>11</td>
<td>Mar. 28-Apr. 1 <strong>Quiz 3</strong></td>
<td>B-field/Biot-Savart’s Law/ Ampere’s Law</td>
<td>28</td>
<td>IV. 4-7 RC circuits</td>
</tr>
<tr>
<td>12</td>
<td>Apr. 4-8</td>
<td>B-Dipoles/ Faraday’s Law</td>
<td>28, 29</td>
<td>V.1,7,8 B-force</td>
</tr>
<tr>
<td>13</td>
<td>Apr. 11-15</td>
<td>Inductance/B-Field Energy</td>
<td>29</td>
<td>V. 2,5,6 B-Field of coils</td>
</tr>
<tr>
<td>14</td>
<td>Apr. 18-22</td>
<td><strong>Quiz 4</strong> Maxwell’s Eqns./EM Waves</td>
<td>30</td>
<td>VI. 1-4 B-flux</td>
</tr>
<tr>
<td>15</td>
<td>Apr. 25–29</td>
<td>AC/RC circuits</td>
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<td>VI. 5,6 Generator</td>
</tr>
<tr>
<td>16</td>
<td>May 2-6</td>
<td>LRC Resonance/ Semiconductors/Review</td>
<td>32</td>
<td>Concept Test</td>
</tr>
</tbody>
</table>
Liberal Education Requirement

This class satisfies the University of Minnesota Liberal Education requirement of a physical science course with a laboratory component, as part of the Liberal Education Core. Discoveries and inventions that have profoundly altered the course of human history arose from the physical sciences. As citizens and voters (whether in the United States or in another country), today’s students will be called upon to make decisions on such topics as global climate change, alternative energy sources and resource management. A familiarity with the methods and findings of the physical sciences has never been more important and forms a crucial component of a common education.

This class will expose the student to physical principles and concepts, demonstrate how these principles can be applied to quantitatively describe natural phenomena, and provide the student with an opportunity to perform hands-on experiments and measurements that replicate how physical knowledge is obtained. The fundamental principles of electricity and magnetism are explored, and their application in electronic circuits will be emphasized. The basic physics that underlies wireless communication technology will be explored and elucidated, providing a necessary solid grounding for future engineering or physical science studies. The class will include discussions of electrostatics, dc and ac circuits, electrical energy and capacitors. Magnetism, electromagnetic induction and oscillations will also be described. Throughout the semester, the application of these physics concepts in modern technology will be emphasized.

All knowledge in the physical sciences is empirically acquired, and a proper exposure to the ways of knowing and thinking in the physical sciences requires a laboratory component to any formal coursework. The lab component of the class will give you experience in making predictions based upon hypotheses, which are then empirically tested by experiment or observation, through which scientific knowledge is developed. The language of the physical world is mathematical and students will be expected to employ mathematical reasoning in order to solve problems both qualitatively and quantitatively. Physics is a social endeavor, and the student will gain experience in cooperative problem solving, working in small groups with other students, in both the laboratory and Discussion sections of the course.

Mandatory Statement about Academic Integrity:

The University expects the highest standards of honesty and integrity in the academic performance of its students. Any act of scholastic dishonesty is regarded as a serious offense, which may result in expulsion. Scholastic dishonesty is defined as submission of false records of academic achievement; cheating on assignments or examinations; plagiarizing, altering, forging, or misusing an academic record; taking, acquiring, or using test materials without faculty permission; acting alone or in cooperation with another to obtain dishonestly grades, honors, submission of false records of academic
achievement; cheating on assignments or examinations; plagiarizing, altering, forging, or misusing an academic record; taking, acquiring, or using test materials without faculty permission; acting alone or in cooperation with another to obtain dishonestly grades, honors, awards, or professional endorsement. Aiding and abetting an act of scholastic dishonesty is also considered a serious offense with the same possible consequences. Students may not make commercial use of their notes of lectures or University-provided materials without the express written consent of the instructor. (See the Senate policy at http://www1.umn.edu/usenate/policies/classnotes.html.)

Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.

If you have any questions or uncertainties about what is permitted and what is not allowed, please discuss them with the instructor.

**Classroom Courtesy:**

If you enter the classroom you are signaling that you came to learn. No newspapers or crossword puzzles, please. No open laptops (not even for taking notes), no earphones, nor eating or drinking, please.

We will make every effort to adhere to the University’s formal session times. But lectures end when the discussion of a particular topic comes to an end, regardless of the clock. Please collect your books only when the instructor indicates that the lecture has ended.

Using another students’ clickers constitutes academic cheating. The University has strict rules regarding cheating. Don’t do it. See below for the University policy.

**DEPARTMENTAL POLICIES**

**ATHLETES** must provide their official University of Minnesota athletic letter containing the approved competition schedule to their instructor and the staff in office 148. Away exams will be arranged with the athletic adviser traveling with the team. Accommodations will be made for official university sports only (i.e. no accommodations will be made for intramurals, club sports, etc.)

**DISABILITY SERVICES:** If you have accommodations for this course, please provide the staff in office 148 with a copy of your accommodation letter for the current semester. Exams will be arranged according to accommodations and sent to the testing center for administration.
MANDATORY POLICY INFORMATION [REFERENCES/LINKS VERSION Follows]

- Student conduct code
  http://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html

- Scholastic Dishonesty
  See student conduct code

- Disability Accommodations
  http://ds.umn.edu/student-services.html

- Use of Personal Electronic Devices in the Classroom
  http://policy.umn.edu/Policies/Education/Education/CLASSROOMPED.html

- Makeup Work for Legitimate Absences
  http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html

- Appropriate Student Use of Class Notes and Course Materials
  http://policy.umn.edu/Policies/Education/Education/CLASSNOTESSTUDENTS.html

- Grading and Transcripts
  http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html

- Sexual Harassment
  http://www1.umn.edu/regents/policies/humanresources/SexHarassment.html

- Equity, Diversity, Equal Opportunity, and Affirmative Action
  http://www1.umn.edu/regents/policies/administrative/Equity_Diversity_EO_AA.html

- Mental Health and Stress Management
  http://www.mentalhealth.umn.edu

MANDATORY POLICY INFORMATION [FULL TEXT VERSION Follows]

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 to adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: http://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html. 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."

**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://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html) 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.

**Disability Accommodations**

The University is committed to providing quality education to all students regardless of ability. Determining appropriate disability accommodations is a collaborative process. You as a student must register with Disability Services and provide documentation of your disability. The course instructor must provide information regarding a course's content, methods, and essential components. The combination of this information will be used by Disability Services to determine appropriate accommodations for a particular student in a particular course. For more information, please reference Disability Services: http://ds.umn.edu/student-services.html.
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/CLASSROOMPED.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/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/CLASSNOTESSTUDENTS.html.

Grading and Transcripts

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+ 1.333
D 1.000 - Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
S Represents achievement that is satisfactory, which is equivalent to a C- or better.

For additional information, please refer to:
http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.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://www1.umn.edu/regents/policies/humanresources/SexHarassment.html

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.

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.