**DRAFT SYLLABUS**  
*University of Wisconsin-Milwaukee, Department of Physics Summer 2019  
209 (Lc 401/Dis 601) General Physics I (Calculus Treatment): 4 credits*

For information on UWM policies and procedures, see: [http://www4.uwm.edu/secu/SyllabusLinks.pdf](http://www4.uwm.edu/secu/SyllabusLinks.pdf)

1. **SELECTED LEARNING GOALS:**

   At the end of this course, students should:
   1) *Have mastered the application of basic differential and integral calculus to kinematics*
   2) *Know and understand the meaning of Newton’s Laws of Motion*
   3) *Be able to use Newton’s Laws of Motion to interpret and solve problems in mechanics, including problems that involve ONLY variables*
   4) *Demonstrate an understanding of the Laws of Conservation of Energy and Momentum (including linear and angular momentum).*
   5) *Be able to use the conservation principles cited in item 4, above, to interpret and solve problems in mechanics.*
   6) *Demonstrate an understanding of oscillatory motion and its connection with wave motion and wave propagation in material media.*
   7) *Have significantly developed their mathematical fluency and problem solving skills.*

2. **PREREQS AND SCHEDULE**

   **Pre-reqs:** Math 227(C), 228(C), or 232(C). Go to [https://catalog.uwm.edu/courses/physics/](https://catalog.uwm.edu/courses/physics/) for further details. Please note that the (C) in the pre-req list does NOT refer to a grade: it signifies that the course is a *Corequisite* that may be taken as *either* a prerequisite *or* as a concurrent registration.

   **Class schedule:**
   - **Lectures:** LEC 401: MTuWTh, 12:30 – 1.45 pm, PHY 133; begins Monday June 24th.
   - **Discussion:** DIS 601 MTuWTh 2:00 – 2.50 pm, PHY 133; begins Monday June 24th.

   Please note that to be properly enrolled in this course, you must enroll in the 209-401 lecture AND the 209-601 discussion.

3. **PERSONNEL**

   **Instructor:** Robert Wood (Associate Chair of Department)  
   **Office:** Kenwood IRC 3038  
   **Phone:** 414-229-5303  
   **Email:** chunnalig@uwm.edu

   **Office hours:** TBA on the course website. The instructor’s office hours will be updated every week.

   **Teaching assistant:** TBA

   **Use of e-mail:**
   - If you e-mail the instructor or the TA, please state clearly:
     1) *Who you are* (please use both given and family names)
     2) Please include *Physics 209 Summer 2019* in the subject line.
     3) By default I shall address students as Ms/Mr and use the family name given in the PAWS class roster. If you want me to use another name or form of address, please let me know asap.

   If you don’t follow 1) and 2), above, there will be some delay in my replying to your message. You may not receive replies to e-mails sent after 5.30pm in the evening or at weekends until the following business day.

   **If you choose to send messages by e-mail that can reasonably be described as unintelligible, discourteous, or abusive** do not expect a response and do expect (in the case of discourteous or abusive messages) your e-mail address to be added to the instructor’s spam filter.
4. COURSE MATERIALS

Text: *Physics for Scientists and engineers: Foundation and Connections Vol 1 (Katz)*  
The instructor strongly recommends the e-book with WebAssign access.  
Visit: [https://uwm.ecampus.com](https://uwm.ecampus.com) for updated prices and further details/purchase options. NOTE THAT YOU WILL NEED ACCESS TO THE ON-LINE HOMEWORK SYSTEM, WebAssign, so the cheapest option which includes the e-book and the access card for the WebAssign system is a good deal.

Course website: This course uses a standard Desire to Learn (D2L) website. Any UWM student enrolled in this class can reach the website: if you are unfamiliar with the D2L system, please refer to the notes on page 8 of this syllabus. Some essential course material including the weekly worksheets (see below) will be available ONLY on this website. The following link may also be helpful for students unfamiliar with the D2L system: [http://d2l.uwm.edu/](http://d2l.uwm.edu/)

Worksheets: Weekly *worksheets* will be posted on the course website. These worksheets include brief notes, examples/questions for lecture, and questions that you will complete during discussion with the guidance of the TA. New worksheets (for the following week) will be posted on Thursday or Friday: please make sure you have downloaded and printed these worksheets before the Monday lecture of the following week so that you can follow what the instructor and the TA are doing in lecture and discussion.

WebAssign access: Details of how to access WebAssign will be given closer to the start of the course.

**IT IS ESSENTIAL THAT YOU USE THE INFORMATION GIVEN ABOVE TO ACCESS WEBASSIGN AS SOON AS POSSIBLE! STUDENTS WHO HAVE NOT CREATED A WEBASSIGN ACCOUNT AND LOGGED IN BY THE END OF THE FIRST DAY OF CLASS MAY START TO MISS HOMEWORK DEADLINES AND LOSE POINTS!**

5. EXPECTED AVERAGE STUDENT TIME INVESTMENT

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class contact (lecture)</td>
<td>1.15 x 28 = 32.20 hrs</td>
</tr>
<tr>
<td>Class contact (discussion)</td>
<td>50/60 x 28 = 23.33 hrs</td>
</tr>
<tr>
<td>Assigned Reading</td>
<td>8 weeks x 5 hrs = 40 hrs</td>
</tr>
<tr>
<td>On line quizzes</td>
<td>28 x 30/60 = 14 hrs</td>
</tr>
<tr>
<td>Reviewing worksheets before lecture/discussion</td>
<td>28 x 1 hr = 28 hrs</td>
</tr>
<tr>
<td>Assignments (on line)</td>
<td>24 x 1 hrs + 7 x 2 = 38 hrs</td>
</tr>
<tr>
<td>Reviewing for 3 tests</td>
<td>3 x 8 hrs = 24 hrs</td>
</tr>
<tr>
<td>3 tests</td>
<td>2 tests x 1.15 +1x2 = 4.3 hrs</td>
</tr>
<tr>
<td>Total semester commitment</td>
<td>203.83 hrs</td>
</tr>
<tr>
<td>(including tests and online quizzes)</td>
<td>25.48 hours</td>
</tr>
<tr>
<td>Weekly average (using 8 weeks)</td>
<td>50.96 hrs/credit</td>
</tr>
</tbody>
</table>

6. GENERAL INFORMATION

**Level of difficulty:** The importance of basic math cannot be over-emphasized. You must be comfortable with basic algebra, arithmetic, and trig: most students who perform poorly in this class do so not because of a weak background in physics but because of their weak math skills. Note that you are expected to handle problems that use only algebraic variables.

**Lab:** The 214 Lab (1 credit) is separate from the 209 Lecture course (4 credits); it is graded independently. You do not have to enroll in the 214 lab course if you are enrolled in the 209 lecture course: whether you take the lab is your decision. Ask your program advisor(s) whether you need to take the lab course. Please note that the instructor of 209 CANNOT tell you whether your program/major requires the lab unless you are a UWM physics major: all UWM physics majors MUST take the lab to satisfy the requirements of the major.

**Calculator:** 1) Please bring a simple scientific calculator to each lecture and discussion. You do NOT need a fancy and expensive programmable calculator such as a TI-83 for basic calculations, but you do need a calculator that can handle trig functions and their inverses, logarithms and antilogarithms to base 10 and to base $e$, and exponent (scientific) notation.
2) The use of a non-programmable, non-graphing, "Scientific" calculator is allowed in tests, but under no circumstance will programmable and/or graphing calculators, cell-phones, and web-capable devices be considered appropriate. Calculators built into cell phones may **NOT** be used during tests.

### 7. Proposed schedule

<table>
<thead>
<tr>
<th>June</th>
<th>M 24</th>
<th>Chapter 1: Units and dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tu 25</td>
<td></td>
<td>Chapter 2: 1-dimensional motion</td>
</tr>
<tr>
<td>W 26</td>
<td></td>
<td>Chapter 2: 1-dimensional motion</td>
</tr>
<tr>
<td>Th 27</td>
<td></td>
<td>Chapter 3: Vectors</td>
</tr>
<tr>
<td>July</td>
<td>M 01</td>
<td>Chapter 3: Vectors Introduction to Chapter 4: 2- and 3-D motion</td>
</tr>
<tr>
<td>Tu 02</td>
<td></td>
<td>Chapter 4: 2- and 3-D motion</td>
</tr>
<tr>
<td>W 03</td>
<td></td>
<td>Chapter 5: Newton’s laws of motion</td>
</tr>
<tr>
<td><strong>Th 04</strong></td>
<td><strong>NATIONAL HOLIDAY</strong></td>
<td></td>
</tr>
<tr>
<td>M 08</td>
<td></td>
<td>Chapter 5: Newton’s laws of motion</td>
</tr>
<tr>
<td>Tu 09</td>
<td></td>
<td>Chapter 6: Applications of Newton’s laws of motion</td>
</tr>
<tr>
<td>W 10</td>
<td></td>
<td>Chapter 7: Gravity</td>
</tr>
<tr>
<td><strong>Th 11</strong></td>
<td><strong>Test 01 (75 minutes)</strong></td>
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</tr>
<tr>
<td>M 15</td>
<td></td>
<td>Chapter 8: Energy Conservation</td>
</tr>
<tr>
<td>Tu 16</td>
<td></td>
<td>Chapter 8: Energy Conservation</td>
</tr>
<tr>
<td>W 17</td>
<td></td>
<td>Chapter 9: Energy in nonisolated systems</td>
</tr>
<tr>
<td>Th 18</td>
<td></td>
<td>Chapter 10: Systems of particles and momentum conservation</td>
</tr>
<tr>
<td>M 22</td>
<td></td>
<td>Chapter 10: Systems of particles and momentum conservation</td>
</tr>
<tr>
<td>Tu 23</td>
<td></td>
<td>Chapter 11. Collisions</td>
</tr>
<tr>
<td>W 24</td>
<td></td>
<td>Chapter 12. Rotational I: Kinematics and Dynamics</td>
</tr>
<tr>
<td>Th 25</td>
<td></td>
<td>Chapter 13: Rotation II: A conservation approach.</td>
</tr>
<tr>
<td>M 29</td>
<td></td>
<td>Chapter 13: Rotation II: A conservation approach.</td>
</tr>
<tr>
<td><strong>Tu 30</strong></td>
<td><strong>Test 2 (75 minutes)</strong></td>
<td></td>
</tr>
<tr>
<td>W 31</td>
<td></td>
<td>Chapter 14: Static equilibrium</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>August</th>
<th>Th 01</th>
<th>Chapter 14: Static equilibrium</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 05</td>
<td></td>
<td>Chapter 15: Fluids</td>
</tr>
<tr>
<td>Tu 06</td>
<td></td>
<td>Chapter 16: Oscillations</td>
</tr>
<tr>
<td>W 07</td>
<td></td>
<td>Chapter 16: Oscillations</td>
</tr>
<tr>
<td>Th 08</td>
<td></td>
<td>Chapter 17: Travelling waves</td>
</tr>
<tr>
<td>M 12</td>
<td></td>
<td>Chapter 17: Travelling waves</td>
</tr>
<tr>
<td>Tu 13</td>
<td></td>
<td>Chapter 18: Superposition and standing waves</td>
</tr>
<tr>
<td>W 14</td>
<td></td>
<td>Chapter 18: Superposition and standing waves</td>
</tr>
<tr>
<td><strong>Th 15</strong></td>
<td><strong>Test 3 (2 hours)</strong></td>
<td></td>
</tr>
</tbody>
</table>

### 8. IMPORTANT UWM DATES

*Please understand that these dates (see below) are decided by the school, NOT by the instructor, who cannot change them either for your or for his own convenience.*

**June 28**th is the LAST DAY for students to add courses, late register or change grading basis for 8-week session classes.

**July 5**th is the LAST DAY to withdraw from 8-week session or drop 8-week session classes without transcript notation (W).

**July 28**th is the LAST DAY to drop 8-week session classes with transcript notation (W). After this date, drops and withdrawals require the signature of the instructor and the school/college advising office. Signatures are given on appeal only for non-academic reasons.

See also: [http://uwm.edu/onestop/dates-and-deadlines/important-dates-by-term/](http://uwm.edu/onestop/dates-and-deadlines/important-dates-by-term/)

### 9. IMPORTANT COURSE DATES (decided by instructor)

THREE tests will be held during the semester at regularly scheduled class times on the following dates: **THURSDAY JULY 11th**, **TUESDAY JULY 30th**, AND **THURSDAY AUGUST 15th**. Test dates will be rearranged for students who have conflicts with religious observance (see note 5, page 6 for official UW policy).
10. QUIZZES, ASSIGNMENTS, AND TESTS

Quizzes: On-line, multiple-choice quizzes will be available each MONDAY, TUESDAY, WEDNESDAY, AND THURSDAY, beginning MONDAY JUNE 24th. The quizzes open and close according to the following schedule:

<table>
<thead>
<tr>
<th>Quiz</th>
<th>Open Time</th>
<th>Close Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>3pm Monday</td>
<td>10pm Wednesday</td>
</tr>
<tr>
<td>Tuesday</td>
<td>3pm Tuesday</td>
<td>10pm Thursday</td>
</tr>
<tr>
<td>Wednesday</td>
<td>3pm Wednesday</td>
<td>10pm Monday</td>
</tr>
<tr>
<td>Thursday</td>
<td>3pm Thursday</td>
<td>10pm Tuesday</td>
</tr>
</tbody>
</table>

The quizzes are timed and graded automatically, and you have THIRTY MINUTES to complete each attempt at any quiz; you are allowed TWO separate attempts at each quiz, and the average of the two scores will be used as your overall score for that quiz. After your first attempt, the questions which you answered incorrectly will be displayed to guide you through your second attempt; no scores/answers will be available until after the quiz has closed for the whole class. There are no make-up quizzes. To take care of illness etc., four quizzes will be dropped for each student at the end of the semester. The quizzes will cover a topic or topics taken directly from lecture, so if you have not been to lecture, don’t expect to be able to do the quiz. Scores (on the D2L course website gradebook) and the answer key for any quiz will be available ONLY after that quiz has closed. See Note 5, page 6 for Religious Observance. Exception: no quiz will be due on July 4th.

Assignments: Short assignments are also available online using the WebAssign system. Instructions for using WebAssign are given in the link provided on page 2 of this syllabus. Beginning Monday June 24th, a new assignment will be available at 3pm after EACH lecture/discussion, that is on Monday, Tuesday, Wednesday, and Thursday. Each assignment is focused on a topic covered in lecture and/or discussion. No extensions will be given and no make-up assignments will be allowed. To take care of illness etc., four assignments will be dropped for each student at the end of the semester (but see Note 5, page 6 for Religious Observance). The assignments open and close according to the same schedule as that for the quizzes, which is repeated below.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Open Time</th>
<th>Close Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday assignment</td>
<td>3pm Monday</td>
<td>10pm Wednesday</td>
</tr>
<tr>
<td>Tuesday assignment</td>
<td>3pm Tuesday</td>
<td>10pm Thursday</td>
</tr>
<tr>
<td>Wednesday assignment</td>
<td>3pm Wednesday</td>
<td>10pm Monday</td>
</tr>
<tr>
<td>Thursday assignment</td>
<td>3pm Thursday</td>
<td>10pm Tuesday</td>
</tr>
</tbody>
</table>

Exception: no assignment will be due on July 4th.

Tests: 1) Three tests will be held during the semester at regularly scheduled class times on the following dates: THURSDAY JULY 11th, TUESDAY JULY 30th, AND THURSDAY AUGUST 15th. The material covered in each test will be specified in a brief test review guide that will be posted on the course website at least three days before the test. THAT TEST 03 (FINAL TEST) WILL BE 2 HOURS LONG AND WILL BE COMPREHENSIVE (CUMULATIVE)!

2) If you want a passing/good grade, then you must attend all tests. Failure to do so will adversely affect your overall grade. Note that each test is administered during the regularly scheduled class time: Tests 01 and 02 are each 1 hour and 15 minutes long, and Test 03 is 2 hours long.

3) It is the responsibility of each student to attend the tests: oversleeping, lapses of memory, and similar excuses will not be considered grounds for a make-up.

4) Make up tests will be allowed only in cases of: illness resulting in hospitalization or a documented emergency/urgent care visit to a physician; documented family emergencies/bereavement; and verifiable (documented) traveling difficulties. All such absences must be supported by appropriate documents. If a student misses any test for medical reasons, a physician’s note, clearly showing the signature and letterhead of the physician, must be produced before a make-up can be allowed. The note must state clearly that in the student was not fit to take the test. A note stating only that a student visited (for example) the campus Norris Health Center is not sufficient. Notes from family members/relations are not acceptable.

5) Tests will be rearranged for students who have conflicts with religious observance. See Note 5, page 6 for Religious Observance.
6) Students may NOT leave a test during the first thirty minutes. Students arriving late may NOT take the test if they arrive after any student has already left.

**Test format:**
All tests are multiple-choice format and contain thirty, 5-response multiple-choice questions, each worth two points; the test questions involve both conceptual understanding and definitions, and more substantial quantitative problems involving interpretation, detailed calculations, algebraic manipulation. Some questions may involve working ONLY with algebraic variables.

Make sure you bring to each test:
1) Two #2 pencils, because you will record your answers on a standard scantron sheet which will be machine read.
2) A record of your UWM student id# (you can find out what this is from the PAWS website if you do not know it), which MUST be recorded on your scantron sheet.
3) A PHOTO ID.

**Test content:**
Test problems will be based on the material covered during lecture, the material covered during discussion, the quizzes, and the questions you will find in the assignments. Please note that this **DOES NOT** mean that questions you have already seen will simply be repeated word for word on tests. You may NOT use note-cards, notes, solution sets, or textbooks during any test; you may use a calculator, and a formula sheet will be provided with the question paper for each test.

11. GRADES AND INCOMPLETES

**Grades:**
The overall course grade will be determined as follows:
1) 65% from three tests (20% from each of tests 01 and 02 and 25% from test 3 =20+20+25=65%)
2) 17.5% - from on-line quizzes (4 quiz scores will be dropped for each student before overall grades are decided).
3) 17.5% - from online assignments (4 assignment scores will be dropped for each student before overall grades are decided).

Letter grades are determined such that the B-/C+ break point (grade boundary) coincides with the median total score determined by combining scores of the course components listed above with the weights also listed above. Estimated letter grades will be posted after each of the tests to give all students a clear indication of their progress in this course.

**Incompletes:**
Incompletes. A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work.

See [https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf](https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf)

INCOMPLETE POLICY FOR UNDERGRADUATES (Fac. Doc. #1558, 2536) An incomplete may be given to a student who has carried a subject successfully until near the end of the semester but, because of illness or other unusual and substantiated cause beyond that student's control, has been unable to take or complete the final examination or to complete some limited amount of term work. An incomplete is not given unless the student proves to the instructor that s/he was prevented from completing course requirements for just cause as indicated above.

A course marked incomplete must be completed during the next succeeding semester, excluding summer sessions and UWinterim. If the student does not remove the incomplete during this period, the report of "I" will lapse to "F".

12. OTHER IMPORTANT INFORMATION: PLEASE READ THIS CAREFULLY

1. **Discriminatory conduct (such as sexual harassment):** Discriminatory conduct will not be tolerated by the University. It poisons the work and learning environment of the University and threatens the careers, educational experience, and well-being of students, faculty, and staff.

See: [http://uwm.edu/deanofstudents/conduct/](http://uwm.edu/deanofstudents/conduct/)
[https://www4.uwm.edu/secu/docs/other/S_47_Discrimination_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discrimination_Policy.pdf)

2. **Title IX/Sexual Violence.** Title IX is a federal law that prohibits sex discrimination in education program or activities, and UWM policy prohibits such conduct (see
Discriminatory Conduct, above). This includes sexual violence, which may include sexual harassment, sexual assault, relationship violence, and/or stalking in all educational programs and education-related areas. UWM strongly encourages its students to report any instance of sex discrimination to UWM’s Title IX Coordinator (titleix@uwm.edu). Whether or not a student wishes to report an incident of sexual violence, the Title IX Coordinator can connect students to resources at UWM and/or in the community including, but not limited to, victim advocacy, medical and counseling services, and/or law enforcement.

For more information, please visit: https://uwm.edu/titleix/

3. **Cheating and academic misconduct:** all work handed in for grading (including electronic submissions) must be the result of your own efforts. Copying the work of another student or using solutions/answers to problems from an on-line or other source and presenting them as your own, original work, will be regarded as cheating. Cheating/academic misconduct will be dealt with by the instructor according to the UW policies and procedures. Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. For details see: See: http://uwm.edu/deanofstudents/conduct/conduct_procedures/academic-misconduct/

4. **Special Consideration.** The principle of equal treatment of all students shall be a fundamental guide in responding to requests for special consideration. No student should be given an opportunity to improve a grade that is not made available to all members of the class. This policy is not intended to exclude reasonable accommodation of verified student disability, or the completion of work missed as the result of religious observance, verified illness, or justified absence due to circumstances beyond the student's control. (Authority: UWM Faculty Documents 860B and 1927)

5. **Religious observance.** In the syllabus, you will find a schedule of tests. Please inform the instructor ASAP if you see a conflict with religious observance. Also inform the instructor ASAP if the deadline of a quiz or an assignment conflicts with religious observance. A suitable date/time for the test (that does not conflict with the religious observance) or other deadline can then be arranged. Please note the following official UW policies: http://www4.uwm.edu/secu/docs/other/S1.5.htm See also: http://www.interfaith-calendar.org/2019.htm

**Authority: UWS 22 and UWM Fac. Doc. 1918**

I. Declaration of policy. It is the policy of the board of regents that students' sincerely held religious beliefs shall be reasonably accommodated with respect to all examinations and other academic requirements. The board of regents adopts this chapter in order to ensure that all institutions of the university of Wisconsin system have in place appropriate mechanisms for ensuring the reasonable accommodation of students' sincerely held beliefs, and for appeals related to these matters.

II. Accommodation of religious beliefs.

1. A student shall be permitted to make up an examination or other academic requirement at another time or by an alternative method, without any prejudicial effect, where:
   (a) There is a scheduling conflict between the student's sincerely held religious beliefs and taking the examination or meeting the academic requirements; and
   (b) The student has notified the instructor, within the first three weeks of the beginning of classes (within the first week of summer session and short courses), of the specific days or dates on which he or she will request relief from an examination or academic requirement.

2. Instructors may schedule a make-up examination or other academic requirement before or after the regularly scheduled examination or other academic requirement.

3. Instructors shall accept, at face value, the sincerity of students' religious beliefs.

4. Student notification of instructors and requests for relief under sub. (1) shall be kept confidential.

5. Complaints of failure to provide reasonable accommodation of a student's sincerely held religious beliefs as required by this rule may be filed under UWM Complaint and Grievance Procedures.
6. The chancellor shall, through appropriate institutional publications (to include at a minimum the Schedule of Classes and Bulletin), provide notification to students and instructors of the rules for accommodation of religious beliefs, and of the procedure and appropriate office for filing complaints.

6. **Students with disabilities:** please arrange for the authorization for special accommodations issued by the Accessibility Resource Center (ARC) to be sent to the instructor **as soon as possible**. The link for the ARC is [https://uwm.edu/arc/connect/](https://uwm.edu/arc/connect/). This is what you will see if you go to this link; this is a new system which has replaced the old paper "visa forms".

Please note that I cannot allow students to take tests under conditions different from those experienced by the rest of the class (extra time, separate room, etc.) unless they have permission from the ARC. This permission is issued by ARC in the form of an email, but it is the student's responsibility to make the appropriate contact with ARC. The ARC will issue formal instructions to me about how students with disabilities are to be accommodated. Because of limited space in the Physics building, **ALL STUDENTS WHO REQUIRE SPECIAL ACCOMMODATIONS SUCH AS EXTRA TIME MUST ARRANGE TO TAKE THEIR TESTS IN ARC.**

7. **Students called to active military duty:** accommodations and advice for students who anticipate an absence due to call-up of reserves to active military duty are available at this link: [http://uwm.edu/active-duty-military/](http://uwm.edu/active-duty-military/)

8. **Complaint procedures:** Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy. [https://www4.uwm.edu/secu/docs/other/S_47_Discrimination_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discrimination_Policy.pdf)

For your information:

**Chair of Physics:** Professor Prasenjit Guptasarma: KEN 3077, (414)229-6497, pg@uw.edu

**Dean of Students' Office:** [http://www4.uwm.edu/dos/](http://www4.uwm.edu/dos/)

**Equity and Diversity:** [http://uwm.edu/equity-diversity-services/about/](http://uwm.edu/equity-diversity-services/about/)
Please remember that instructors have the same legal protection and redress against libel, slander, defamation, and harassment as you; some students seem not to know or understand this.

9. **Grade appeal procedures**: A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides or in the case of graduate students, the Graduate School. These procedures are available in writing from the respective department chairperson or the Academic Dean of the College/School. See [http://www4.uwm.edu/secu/docs/other/S_28_Grade_Appe_by_Students.pdf](http://www4.uwm.edu/secu/docs/other/S_28_Grade_Appe_by_Students.pdf) [http://uwm.edu/letters-science/advising/answers/forms/policies/appeal-procedure-for-grades](http://uwm.edu/letters-science/advising/answers/forms/policies/appeal-procedure-for-grades)

10. **Behavior during lecture**: please do not disrupt the lecture by talking loudly with neighbors, refusing to pay attention when the lecturer/TA has started teaching by ostentatiously reading the newspaper, texting etc. Please be civil and reasonable.

11. **Cell phones**: please turn off cell phones during lectures, discussions, and tests; please do not sit in front of the instructor or TA during class while texting your friends (or anyone else).

12. **Attendance**: Mandatory: attendance will be recorded at every lecture. See page 6 of this syllabus.

13. **UW-Milwaukee Desire2Learn (D2L) course web sites**:

Materials for this course are available on a Desire2Learn (D2L) course web site. Students may see these materials there anytime using a standard web browser.

**Recommended browsers**: A complete and up-to-date list of recommended browsers and settings can always be found at: [http://kb.wisc.edu/helpdesk/page.php?id=3210](http://kb.wisc.edu/helpdesk/page.php?id=3210). Please contact the UWM Help Desk, as described at the bottom of this page, with any questions about these requirements.

**To find and browse the D2L course web site**:

1. Go directly to the D2L Landing page at [http://D2L.uwm.edu](http://D2L.uwm.edu).

2. On the D2L Landing page, choose the button labeled [UWM ePanther].

3. On the next page, type in your ePanther **Username** (your ePanther campus email, but without the "@uwm.edu") and **Password** (the same password you use for Panther Link and PAWS). Then hit [Login].
   
   • You may bookmark the D2L.UWM.edu landing page, if you wish.
   • To prevent failed log-ins, please DO NOT BOOKMARK the UWM ePanther login page.

4. On the D2L My Home screen, find the area called **My Courses**. You’ll see your active courses here, arranged by Semester, with the newest semester at the top.

5. Click any course title to see the Course Home page. Click [Content] in the navigation bar to begin exploring the site.

6. If you have any difficulty getting into the course web site, please close down your web browser completely and open it up again. Then try logging on again, using the instructions above. If you do not know your ePanther username or password, please get help as indicated below.

7. When you are finished looking around your D2L course sites, always click on [Logout]. This is especially important if you are in a computer lab. Otherwise, the next person who uses the machine will be using your D2L account!

**What to do if you have problems with Desire2Learn (D2L)**

If you have any difficulties with D2L, including problems with your login (e.g., you forgot your password, or if you just can’t get on), please contact the UWM Help Desk. You may do one of the following:
Student Learning Outcomes:

1) Students will understand kinematics in 1, 2, and 3 dimensions using the appropriate mathematical tools of calculus and vector algebra. Students will understand clearly the significance of the instantaneous rate of change of a quantity and the role that such rates of change play in kinematics. Students will be able to apply this knowledge to real world problems from physics, engineering, and biomechanics. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

2) Students will understand Newton’s Laws of Motion both conceptually and quantitatively, and will be able to apply the same to the solution of real world problems in physics, engineering, and biomechanics. Students demonstrate mastery of concepts such as mass, force, and momentum both qualitatively and quantitatively. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

3) Students will understand the significance and application of conservation laws in both momentum and energy. Students will be able to apply this knowledge to real world problems from physics, engineering, and biomechanics. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

4) Students will learn to apply the above topics to new situations involving rotational motion. Students will be able to apply this knowledge to real world problems from physics, engineering, and biomechanics. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

5) Students will learn to apply and extend the principles assimilated in topics 1) through 3), above, to periodic (oscillatory) motion, the motion of fluids, and wave motion; they will demonstrate their ability analyze and solve quantitative problems. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

6) Students will learn to apply and extend the principles assimilated in topics 1) through 3), above, to basic kinetic theory and hence to basic thermal physics; they will demonstrate their ability analyze and solve quantitative problems. (Aligns with criteria 1 and 2, and UW System Shared Learning Goal 2)

7) In general, in all topics, students will explore general principles by constructing and solving mathematical models for specific examples which will be drawn from many different fields, including basic mechanical engineering, biomechanics, practical acoustics, and thermal physics. Students are encouraged to consider the assumptions built into their models, the limitations these assumptions impose on their results, and to explore to (within the mathematical limitations of the course) the consequences of relaxing these assumptions. Students will consider how well the predicted behavior of their model systems differs from that actually observed for such a system. (Aligns with criteria 1, 2 and 4, and UW System Shared Learning Goal 2)

8) Ideas will be put in their historical context: for example, a clear statement of Aristotelian concepts assists students to understand the scope and impact of the “Newtonian revolution” and its affect not only on the development of physics but also on the development of mechanical engineering. It is important for students to understand that hypotheses/theories that are now regarded as incorrect were once consistent with the best experimental evidence available. However, examples of “bad science” are also exposed, such as the erroneous presentations to be found in many biomechanics/medical physics textbook of the lung-chest system as a lightly damped oscillator (Aligns with criterion 4).

Assessment: attainment of GER-NS Criteria 1, 2, and 4, and UW System Shared Learning Goal 2 will be assessed through recording the student responses to predetermined questions on two semester tests and the final. These questions are all five-response, multiple choice format with no partial credit given; both conceptual questions and questions that require calculus and problem solving skills are included. Although students take daily quizzes and regularly complete assignments, the result of these course components are not be used for formal assessment. This is because in tests, almost the whole student body participates under controlled conditions.

It is significant that the same concepts will recur not in repeated questions but in new contexts: monitoring the count of correct responses for questions associated with a key concept, as it is applied to different contexts, provides a significant metric not only of student knowledge base but also of student ability to apply
existing knowledge to novel or unfamiliar situations – in short, the development of critical scientific thinking. Monitoring collective student performance during the semester will allow the instructor quickly to identify topics that require more (or less) attention. However, the instructor(s) will collect detailed information every semester and it will be considered before the following semester by the undergraduate committee of the department; this will allow the department to suitably modify the teaching materials and presentation in future offerings of this course.

The assessment concerns questions that specifically address:

1) Newton’s Laws of Motion applied both qualitatively and quantitatively
   - Understanding of rate of change of a quantity as expressed by its tangent slope in kinematics (central to understanding Newtonian physics and the significance of accelerated motion).
   - Newton’s Laws of Motion applied both qualitatively and quantitatively in the linear case
   - Newton’s Laws of Motion applied to the rotational case.

2) Conservation Laws
   - Conservation of energy
   - Conservation of linear momentum
   - Conservation of angular momentum
Each student enrolled in this course is asked to sign the following statement and return it to the instructor no later than lecture on Wednesday June 26th. The instructor may administratively drop students who fail to do so this.

Please print your name on the line below.
FAMILY NAME FIRST, GIVEN NAME LAST__________________________________________

Statement by student:
1) I have READ THE SYLLABUS FOR THIS COURSE (Physics 209-401) and acquainted myself with the policies therein.
2) I have checked that I satisfy the pre-reqs for this course; if I do not satisfy them, I have discussed my situation with the instructor.
3) I have checked the schedule of tests for conflicts with religious observance and informed the instructor if such conflicts exist.
4) If I intend to ask for special accommodations because of a disability, I have at this date either arranged for the ARC authorization (the "Accommodation Plan") to be sent to the instructor (see page 7 of the syllabus) or I have notified the instructor that I have contacted the ARC which is currently assessing my case.
5) I have noted the two UWM drop dates clearly stated on page 3 of this syllabus.
6) I have logged in to the WebAssign system.
7) I understand that failure to participate may lead to my being dropped from the class.

Date______________________________________________________________

Please sign your name legibly here______________________________________________