Genesee Community College - PHY 100 – 01: How Things Work (3 credits) Spring 2021

SYLLABUS

INSTRUCTOR. Mike Crittenden, 585-343-0055 ext. 6397, e-mail macrittenden@genesee.edu (I check that email frequently on weekdays, and sometimes on weekends but not always. Don't count on me getting voicemail or messages in Blackboard.) Alternate e-mail in case GCC system fails: professormac@live.com (If the GCC system has not failed, I go for weeks without checking that.)
OFFICE HOURS by appointment. To minimize personal contact, consider using email, phone or Zoom.
REQUIRED: 1) Calculator, for basic arithmetic. For tests it must not resemble a phone.
2) Text: Conceptual Physics, 12th edition, by Paul G. Hewitt (Inexpensive older editions are usable.)
3) Access to a computer with a webcam.
4) Access to high-speed internet.
5) A way to send me documents, such as a scanner or by taking pictures with a phone.

ANTICIPATED SCHEDULE:

Class					
#1	Tu 1/26/21	Begin course. (Watch first video.)	16	Th 3/18	Quiz 8/ lab 8
2	Th 1/28	homework 1 due, lab 1	17	Tu 3/23	**Exam 2 (sec 5 - 8)**
3	Tu 2/2	Quiz 1/ homework 2 due	18	Th 3/25	hw 9 due/ Quiz 9/ lab 9
4	Th 2/4	Quiz 2/ lab 2	19	Tu 3/30	hw 10 due
5	Tu 2/9	hw 3 due	20	Th 4/1	Quiz 10/ lab 10
6	Th 2/11	Quiz 3/ lab 3	21	Tu 4/6	hw 11 due
7	Tu 2/16	hw 4 due	22	Th 4/8	Quiz 11/ lab 11
8	Th 2/18	Quiz 4/ lab 4	23	Tu 4/13	hw 12 due
9	Tu 2/23	**Exam 1 (sec 1 - 4)**	24	Th 4/15	Quiz 12/ lab 12
10	Th 2/25	hw 5 due/ Quiz 5/ lab 5	25	Tu 4/20	**Exam 3 (sec 9 - 12)**
11	Tu 3/2	hw 6 due	26	Th 4/22	hw13 due
12	Th 3/4	Quiz 6/ lab 6	27	Tu 4/27	Quiz 13
13	Tu 3/9	hw 7 due	28	Th 4/29	hw 14 due/ lab 13
14	Th 3/11	Quiz 7/ lab 7	29	Tu 5/4	Quiz 14
15	Tu 3/16	hw 8 due	30	Th 5/6	**Final Exam (sec 1 – 14)**

GRADING SYSTEM / COURSE REQUIREMENTS:

You must earn at least two thirds of the possible lab points or you will receive an F for the course, regardless of your test scores. (You fail if you miss more than four labs.) Otherwise, assuming no reduction for dishonesty, your grade is determined by the higher of these two methods. You can keep track of your grades below. Keep graded papers in case you find an error in my records.

Method 1: Divide the total from this calculation by the maximum possible.

Homework(10 ea.):(___+___+___+___+___+___+___+___+___+___+___+___+___+___+___+___) / 4 =____
Quizzes (10 each): ___+___+___+___+___+___+___+___+___+___+___+___+___+___+__ = ____
Labs (10 each): ___+___+___+___+___+___+___+___+___+___+___+___+___+___ = ____
Exams (100 points each): _____ + _____ + _____ = ____
Final Exam (150 points): ____
Total: ____

No grades are dropped, except when replaced by a retest. No extra credit.
Maximum score = 755, of which 35 points (4.6%) comes from homework. Quizzes: 140 points (18.5%). Labs: 130 (17.2%). Exams: 300 (39.7%, or 13.2%each). Final Exam: 150 (19.9%).

Method 2: (This is for you to fall back on if you have a bad day on an exam.) Same as method 1, except replace the lowest 100 point exam with your percent score on the final.

	B+: 86.7% - 89.9%	C+: 76.7% - 79.9%	D+: 66.7% - 69.9%	
A: 93.3% - 100%	B: 83.3% - 86.6%,	C: 73.3% - 76.6%	D: 63.3% - 66.6%	F: 0 – 59.9%
A–: 90% - 93.2%	B–: 80% - 83.2%	C–: 70% - 73.2%	D–: 60% - 63.2%	

If a lab or test has to be canceled, the same percents will apply to the smaller number of possible points.

W: To withdraw, contact the records office by the ninth week. W's cannot be issued by faculty.

IP: Contact me by the day after the final. As with any time extension, you need a legitimate reason.

For a crude estimate of your grade before the course is over:
(0.46)(hw total so far) / (number of homeworks so far) = _____
(1.85)(quiz total so far) / (number of quizzes so far) = _____
(1.72)(lab total so far) / (number of labs so far) = _____
(.596)(exam total so far) / (number of exams so far) = _____
Total: _____ %

With nearly perfect lab grades, which most people have, roughly 50% is the minimum needed on quizzes and exams to pass with a D–. Mid 60s for a C (not C –), high 70s for a B, low 90s for A. (This is based on the idea that B– means "slightly above average," together with the fact that a typical class on a typical test has an average grade around 75%..)

Homework. Submit written assignments in Blackboard. They are due on the dates listed above at 9:00 am. The reading in the text corresponding to each assignment starts on page 7 of this syllabus. Blackboard (aka "My Courses") will give you a second chance if you get questions wrong.

To submit homework, go to www.genesee.edu then click myGCC at the top. Click LOGIN and then enter your ID and password. If necessary, click Student and then My Courses near the top. Click PHY-100-01. Click Assignments in the menu on the left and then select an assignment. Click Begin, then enter the answers. Click Save and Submit. Click Ok, then click OK again in the lower right corner. To make a second submission, start again by clicking Assignments. You don't get a third chance.

Shortly after an assignment is due, I will post the correct answers to help you prepare for the quiz. Go into Blackboard and click on Answers to Assignments.

Quizzes and Exams. After an assignment was due and I posted the answers, there will be a quiz consisting of questions from that assignment. Questions which were multiple choice in the homework may sometimes be converted to short answer on quizzes.

There are also three exams and a final, consisting of questions you have not seen before. Multiple choice.

Retests. I do not drop any grades. Instead, you can take another quiz on the same material. The better of the two counts. You may retake a maximum of five quizzes, within one week of the original, but not after the final exam. A retest counts as one of these five even if it does not improve your grade. Making up a quiz you missed counts as a retest unless I agree otherwise. There are no re-retests or retests on exams.

IS THIS THE RIGHT PHYSICS COURSE FOR YOU?

PHY 100 is for students with unrelated majors such as Elementary Ed, Business or Drama.
PHY 121 & 122: for technology or health-related majors such as Drafting or Pharmacy.
131, 132 & 133: for majors such as Physics, Engineering or Mathematics.
It's fine to take a course which is more than the minimum necessary. Also, requirements vary between four-year schools; you should check what is required where you want to go.

Format of Course:

No in-person lectures; I have recorded them. Watch them in Blackboard, under Videos, on any schedule you like as you prepare for each quiz.

Labs, most quizzes and the final exam will be in person on Thursdays. Masks and gloves required. While I encourage you to do the labs for real, there is a video option and you can do any or all parts of the course remotely if you want. (If at some point the pandemic has mostly passed, I may require in-person attendance on Thursdays from that point onward.) During a normal lab, I would critique your work and send it back for correction a few times, so if you work from home, allow enough time before the deadline for multiple emails. **I will not accept labs more than one week after the date on the schedule above.**

Everyone will take at least some exams and quizzes remotely. These must be taken at the regular class time, 9:00 am, on the scheduled date. I will proctor them by watching you through your webcam. Use this link any time we Zoom. https://zoom.us/j/3044832590

Storm Cancellation: Because there is a remote option, there will be no snow days regardless of whether the College closes its physical facilities. I will just Zoom from home. Even if the College does not officially close, I recommend that you consider this option if driving seems unsafe to you.

COURSE DESCRIPTION:

Catalog description: Explores the physical world and its impact on human life, including the basic principles of mechanics, thermodynamics, electricity, magnetism, waves, optics, and atomic physics. Recommended for students pursuing nontechnical majors. Two class hours and two laboratory hours.

Prerequisite: Basic arithmetic skills equivalent to MAT 091

Course Learning Outcomes (CLOs):

Upon the successful completion of this course, a student will be able to:

1. Describe basic principles of physics using proper terminology. (This includes an overview of mechanics, thermodynamics, waves and optics, electromagnetism, and atomic/ nuclear physics.)

2. Reason, using basic principles of physics to draw conclusions.

3. Interpret equations and graphs conceptually.

4. Apply mathematical processes correctly to solve physics-based problems (Select correct formula; assign correct numerical values; perform arithmetic.)

5. Use laboratory equipment, given written instructions, to demonstrate and verify theoretical principles in actual physical systems.

6. Analyze the results of laboratory experiments to draw conclusions on whether they are in agreement with generally accepted values or principles.

RULES & POLICIES:

Attendance: I am not your mother and will not try to make your choices for you. I also don't believe in giving away points for just sitting in a chair. Attendance is not part of calculating your grade. If thinking about skipping class, keep in mind that I will fail you if you don't know this stuff.

Federal regulations require Colleges to report students who register but "no show." You must take specific actions at least once **within the first three weeks** or you will be dropped from the course. Examples of what meet federal expectations include, but are not limited to, any one of these:

- Showing up at least once in a face to face class meeting.
- Submission of at least one homework assignment or quiz.
- Submission of a student-to-instructor message about a specific aspect of the course. (Emailing me about course content counts. Emailing about something else, like telling me your computer is broken, does not.)
- Students who simply log into the course but perform no student-initiated action do NOT satisfy the expectations of the federal No Show attendance reporting and will be dropped from the course. You must engage in at least one student-initiated activity to be counted as attending. (Going into Blackboard and looking around does not count.)

Missing a quiz or exam: If possible, contact me on or before the day of the test. You will probably need to document the fact that missing the test was beyond your control. (Paperwork from your medical treatment, the receipt for your car's repairs or parts, the police report …) If you're sick for a quiz but not sick enough to see a doctor, just take the retest. If this happens for a big test, I'll accept your word once, as long as you take the test before I release the answers at the next class. If you have

some unusual problem, explain it to me. I try to be reasonable; however, the final judgment as to what is reasonable is mine, and I may reject any undocumented excuse. If I do, the zero can be raised by a retest on a quiz, or by "method 2" for an exam. Don't miss the Final without a good reason.

Missed or late labs: If possible, hand in lab reports before leaving the laboratory; otherwise, get them to me within one week. If you miss class, use the remote option. Remote labs must be received no later than one week after the scheduled date. I do not accept late papers without a reason. "I forgot to bring it" will work once or twice. Exceptions will be made, of course, for documented hardships.

Late homework: Explain it to me. I try to be reasonable, but may reject any undocumented excuse.

Behavior: If I feel you are unacceptably offensive or distracting, I may deny you permission to be in class for however long seems appropriate to me. This includes possible expulsion from the course, with zeros on all remaining work. I've never had to do this; let's keep it that way. For more information on behavior, put "student code of conduct" in the search box at genesee.edu.

Cheating: A first offense will result in a course grade reduction of one letter. (If you cheat on an exam, the average of the other two exams will be used as the grade for that exam. If you cheat on a quiz, the average of the other quizzes will be used as its grade. After that, 10% will be subtracted from your grade for the course.) I will notify the Dean of Students, which will lead to more severe penalties if you have a previous history of dishonesty. A second offense, meaning you previously cheated in any course at GCC, will result in a course grade of F. More extreme cases may lead to suspension or expulsion from the college as described in the Code of Conduct.

Cheating is obtaining or intentionally giving unauthorized information to create an unfair advantage in an examination, assignment, or classroom situation. *Plagiarism* is the act of presenting and claiming words, ideas, data, programming code or creations of others as one's own. Plagiarism may be intentional – as in a false claim of authorship – or unintentional – as in a failure to document information sources using MLA (Modern Language Association), APA (American Psychological Association), Chicago or other style sheets or manuals adopted by Faculty at the College. Presenting ideas in the exact or near exact wording as found in source material constitutes plagiarism, as does patching together paraphrased statements without in-text citation. The purchasing or sharing of papers or projects between students or the re-use of papers or projects submitted for more than one assignment or class also constitutes plagiarism."

Examples of academic dishonesty include but are not limited to the following:

- Taking an exam for another student.
- Having another student take an exam for you.
- Arranging with other students to give or receive answers by the use of signals.
- Copying from someone's exam.
- Allowing another student to copy from you during an exam.
- Obtaining answers, information, translations or material from a source (ex. the Internet) without appropriate citation.

- Getting questions or answers from someone who has already taken the exam.
- Unauthorized use of information stored in the memory of an electronic device (ex. programmable calculators and cell phones) on a test or assignment. No information stored in any electronic devices may be used without explicit permission.

Punctuality: If you are late for a quiz or exam, your paper will be collected when everyone else's is, unless you offer a reasonable explanation. If you arrive over 15 minutes after the class has started a lab, and there is no available setup, you will have to use the video instead.

Accessibility Statement: If you have a physical, psychological, medical, or learning disability that may impact your coursework or participation in this class, please contact the Assistant Dean for Student Services/Disabilities Coordinator, Success Coach, or Academic Advisor who will arrange an intake meeting. The Assistant Dean/Coordinator will determine with you what accommodations are necessary, appropriate, and reasonable. All information and documentation is confidential.

If you encounter any course materials that are inaccessible with adaptive equipment or inaccessible due to extenuating circumstances please let me know or contact those above.

For Access & Accommodation Services phone 585-343-0055 x6219 or email AccessServices@genesee.edu

Please contact GCCOnline@genesee.edu or call 585-343-0055 extension 6969 with any questions you might have about studying online, support services for online students, or questions about enrolling in other online courses.

Support Services.

Ask me for help any time.

Tutoring is available remotely. To find schedules, make appointments and view your tutoring history visit https://tutortrac.genesee.edu. To work with a tutor via email or to inquire about tutoring services, email tutoring@genesee.edu. Additional success resources are available in the Learning Center, which you can enroll in by visiting the Tutoring module within MyGCC.

STAR-NY is an online, evening tutoring service. It is open to all GCC students, whether they are in an online class or not. To work with a STAR-NY tutor, visit https://www.starny.org/ and log in with your GCC NetID and password. Questions about the STAR-NY service can be sent to GCCOnline@genesee.edu

For information on other support such as testing services, disabilities support, internet access, help desk, financial, transfer or career services, or contact information for GCC people or offices, see genesee.edu. There is an "Information for All Students" document: From www.genesee.edu, click Student, just below the search box. Under Student Services, click Help Desk/ Technical info. Click IFAS.

Homework:

The course is divided into fourteen sections. Submit the written assignment for each using Blackboard, as explained earlier. After it is due, I will put the answers in Blackboard under Course Materials. Soon after that, there will then be a quiz on the assignment. Questions which were multiple choice in the homework will sometimes be converted to a short answer format on quizzes.

Reading in the text which corresponds to each assignment is as follows.

SECTION 1, Motion, Force, and Newton's Laws. Ch. 2, p. 26 – 28 and sec. 6 – 8. Ch. 3, sec. 2 – 5. Ch. 4, sec. 1 & 4 – 6. Ch. 5, sec. 1 – 3.

SECTION 2, More on Forces and Newton's Laws. Ch. 4, sec. 2 & 3. Ch. 8, sec. 5 & 6. Ch. 9, sec. 1, 3 & 4. Ch. 10, sec. 2.

SECTION 3, Fluid Mechanics & The Gas Law. Ch. 13, sec. 1, 3, 4 & 7. Ch. 14, sec. 3 – 5. Ch. 15, sec. 1

SECTION 4, Energy, Temperature & Heat. Ch. 7, sec. 1 – 3 & 5. Ch. 15, sec. 2 – 5. Ch. 17, sec. 6.

SECTION 5, Heat Engines and the Laws of Thermodynamics. Ch. 17, p. 329. Ch. 18, p. 339 – 340, sec. 6 – 8.

SECTION 6, Vibration & Waves. Ch. 19, sec 1, 2, 4 & 6. Ch. 20 sec. 1 – 3. Ch. 21, sec 2 & 3.

SECTION 7, Resonance, Sound & Musical Instruments. Ch. 19, sec. 5. Ch. 20, sec. 6 & 8. Ch. 21, sec. 4.

SECTION 8, Electric Potential, Current & Power. Ch. 22 sec. 1, 2,4 5 & 9. Ch. 23, sec. 1 – 5

SECTION 9, Electrical Safety; Magnetism. Ch. 23, p. 435 – top 436 & p. 445. Ch. 24, sec. 2, 3 & 5 – 7

SECTION 10, Induction & Electronics. Ch. 22, p. 423. Ch. 23, sec. 5 (again). Ch. 25, sec. 1 – 3 & 5 – 7. Diodes, p. 573 – 574.

SECTION 11, Electromagnetic Waves & Interference. Ch.20, sec. 7. Ch. 26, sec. 1 & 3. Ch. 29, sec. 2 – 4.

SECTION 12, Reflection, Refraction and Optics. Ch. 28, sec. 2 – 7.

SECTION 13, The Atom & The Nucleus. Ch. 11, sec. 4 & 6. Ch. 30, sec. 2, 3, 5, 6, 8 & 9. Ch. 32, sec. 3 & 4. Ch. 33, sec. 2, p. 622, & sec. 7.

SECTION 14, Radioactivity & Nuclear Energy. Ch. 33, sec. 3, 5 & 8. Ch. 34, sec. 1, 4, 6 & 7.