

Physics 101 – Introduction to Physics

Arizona State University

Fall 2016

Section 70355

Class times: (CLCC 254) MW: 4:35–5:50

Labs: (CLCC 385)

M: 10:30–1:15 (73103)

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Mastering Physics ID: TUCKER70355

Office hours: (CLCC 217C) W: 2–4

M: 1:30–4:15 (73102)

Course Description

Emphasizes applications of physics to life in the modern world. Presumes understanding of elementary algebra.

Lecture Grading

The grading scale is a simple linear scale: $\geq 90\%$ is an A and so on. Weights are as follows.

Homework (35% of grade)

Most homework is assigned through the online Mastering Physics system. Additionally, a single written homework question (due at the beginning of the next class) will be given at the end of most lectures.

Participation and Quizzes (15% of grade)

Discussion is an important part of this class. Active participation is required. Keeping up with assigned reading is vital, so there will be a short quiz at the beginning of most lectures.

Tests (30% of grade)

Three in-class tests will be given during the semester.

Final exam (20% of grade)

The comprehensive final exam will be held on December 5.

Laboratory Grading

Lab activities are important to get hands-on experience with physical principles and phenomena discussed in class. You do not need to purchase a lab manual. Instead, lab procedures will be posted on Blackboard for you to print out and bring with you. As with lecture, the grading scale is a simple linear scale. Weights are as follows.

Prelab quiz (20% of grade)

To prepare for in-lab work, you must read the lab procedure in advance and review the relevant background material in the main course textbook. You will answer prelab questions and turn in answers at the beginning of each section. There is no prelab quiz for the first lab meeting.

Quizzes (20% of grade)

Each section will have a quiz at the end with questions regarding the current activity AND the previous completed activity.

Participation (20% of grade)

Completion of every activity is required. There are no make-up sessions for missed labs. Failure to complete a lab activity will result in a lower final grade.

Short report (20% of grade)

At the end of each lab session, each group will submit a short lab report.

Formal report (20% of grade)

For one or two selected activities (to be announced during the semester), an individual report is required.

Course/Instructor Evaluation

The course/instructor evaluation for this course will be conducted online 7-10 days before the last official day of classes of each semester or summer session. Your response(s) to the course/instructor are anonymous and will not be returned to your instructor until after grades have been submitted. The use of a course/instructor evaluation is an important process that allows our college to (1) help faculty improve their instruction, (2) help administrators evaluate instructional quality, (3) ensure high standards of teaching, and (4) ultimately improve instruction and student learning over time. Completion of the evaluation is not required for you to pass this class and will not affect your grade, but your cooperation and participation in this process is critical. About two weeks before the class finishes, watch for an e-mail with "**NCIAS Course/Instructor Evaluation**" in the subject heading. The email will be sent to your official ASU e-mail address.

Withdrawals: The instructor will **NOT** withdraw students for any reason. Specifically, students should be aware that non-attendance will **NOT** automatically result in their being dropped from the course. Therefore, if a student does not attend class during the first week or for any extended period of time during the semester, they should not presume that they are no longer registered. **It is the student's responsibility to be aware of their registration status.**

Please note the following dates:

Session Date & Deadlines	Session A (7.5 Week Session) Aug 18 – Oct. 7, 2016	Session B (7.5 Week Session) Oct 12 – Dec 2, 2016	Session C (15 Week Session) Aug 18 – Dec 2, 2016 (Final Exams Dec 5 -10, 2016)
Classes Begin	August 18, 2016	October 12, 2016	August 18, 2016
Drop/Add Deadline (w/out College approval)	August 19, 2016	October 13, 2016	August 24, 2016
Tuition & Fees 100% Refund Deadline	August 24, 2016	October 18, 2016	August 31, 2016
Labor Day Holiday Observed – University Closed	September 5, 2016		
University 21 st Day	September 7, 2016	November 1, 2016	September 7, 2016
Course Withdrawal Deadline	September 7, 2016	November 1, 2016	November 2, 2016
Complete Session Withdrawal Deadline	October 7, 2016	December 2, 2016	December 2, 2016
Fall Break	October 8-11, 2016		
Veteran's Day Observed – University Closed	November 11, 2016		
Thanksgiving Observed – University Closed	November 24-25, 2016		
Deadline to Apply for Graduation	October 3, 2016		
Classes End/Last Day to Process transactions	October 7, 2016	December 2, 2016	December 2, 2016
Final Exams	Last day of classes	Last day of classes	December 5-10, 2016
Final Grades Due	October 10, 2016	December 5-12, 2016	December 5-12, 2016
Degree Conferral Date	December 12, 2016		

Any withdrawal transaction must be completed by the deadline date in accordance to the appropriate session at the registrar's office. If not, you will still be officially enrolled and you will receive a grade based on your work completed.

*As part of a complete session withdrawal a student must withdraw from all classes in a session. Beginning the first day of classes, undergraduate students are required to work with a Student Retention Coordinator to facilitate the withdrawal process. Please refer to <http://students.asu.edu/StudentRetention>

For additional information about ASU's withdrawal policy and the possible consequences of withdrawing from a class, contact Registration Services or your academic counselor.

Students are responsible for their registration status!

The Grade of Incomplete: A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents a student who is doing acceptable work from completing a small percentage of the course requirements at the end of the semester. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed. **A grade of incomplete will NOT be awarded unless there is documented evidence of extreme personal or immediate family hardship.** Changes in work hours, child-care emergencies, or other similar personal problems will not be approved as reasons for awarding incompletes. The Director of the School of Mathematical and Natural Sciences must approve all incomplete grade requests.

Reasonable Accommodations for Students with Disabilities: The Disability Resource Center (DRC) provides information and services to students with any documented disability who are attending ASU West. Individualized program strategies and recommendations are available for each student as well as current information regarding community resources. Students also may have access to specialized equipment and supportive services and should contact the instructor for accommodations that are necessary for course completion.

Academic Integrity and Code of Conduct:

As defined in the *ASU Student Academic Integrity Policy*: <http://provost.asu.edu/academicintegrity>.

Each student has an obligation to act with honesty and integrity, and to respect the rights of others in carrying out all academic assignments. A student may be found to have violated this obligation and to have engaged in academic dishonesty if during or in connection with any academic evaluation, he or she:

- Engages in any form of academic deceit;
- Refers to materials or sources or employs devices (e.g., audio recorders, crib sheets, calculators, solution manuals, or commercial research services) not authorized by the instructor for use during the academic evaluation;
- Possesses, buys, sells, obtains, or uses, without appropriate authorization, a copy of any materials intended to be used for academic evaluation in advance of its administration;
- Acts as a substitute for another person in any academic evaluation;
- Uses a substitute in any academic evaluation;
- Depends on the aid of others to the extent that the work is not representative of the student's abilities, knowing or having good reason to believe that this aid is not authorized by the instructor;
- Provides inappropriate aid to another person, knowing or having good reason to believe the aid is not authorized by the instructor;
- Engages in plagiarism;
- Permits his or her work to be submitted by another person without the instructor's authorization; or
- Attempts to influence or change any academic evaluation or record for reasons having no relevance to class achievement.

PHY101 follows the ASU Academic Integrity Policy in the administration of all course examinations and assignments. Violations of the University Academic Integrity policy will not be ignored. Penalties include reduced or no credit for submitted work, a failing grade in the class, a note on your official transcript that shows you were punished for cheating, suspension, expulsion and revocation of already awarded degrees. The university requires that the implementation of any of these penalties for violations of the academic integrity policy be reported to the Dean's office. The Integrity Policy defines the process to be used if the student wishes to appeal this action.

In PHY101 you are expected to follow the *ASU Student Code of Conduct* (<http://students.asu.edu/srr/code>) especially when communicating with your peers, instructors, and teaching assistants. Violations of the student code of conduct may result in withdrawal from the class.

Missed Work/Exam Make-up Policy: Due dates for assignments and exam dates are not flexible. Late work will not be accepted, and missed exams cannot be made up, without prior approval of the instructor and without appropriate documentation of a medical or other emergency. The instructor has the right to deduct 10% of the value of the assignment, per day, for any late work or exams that are accepted. The instructor also may add additional provisions to this policy as dictated by course requirements.



Final Exam Make-up Policy: The final exam schedule listed in the Schedule of Classes will be strictly followed. Exceptions to the schedule and requests for make-up examinations can be granted only by the director of the School of Mathematical and Natural Sciences for one of the following reasons:

- 1) religious observances
- 2) the student has more than three exams scheduled on the same day
- 3) two finals are scheduled to occur at the same time

Make-up exams will **NOT** be given for reasons of non refundable airline tickets, vacation plans, work schedules, weddings, family reunions, or other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

If there is a last-minute personal or medical emergency, the student may receive a grade of Incomplete and makeup the final within one calendar month. The student must provide written documentation and be passing the class at the time to receive an Incomplete. A signed "Request for Grade of Incomplete" must be submitted by the student and approved by the student's instructor and the Director of the School of Mathematical and Natural Sciences.

The instructor reserves the right to make changes to this syllabus as needed.

If you find it necessary to leave a note for this instructor, please contact the administrative reception desk of the School of Mathematical and Natural Sciences located at CLCC II 265

Title IX:

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>

Policy against Threatening Behavior:

In the classroom and out students are required to conduct themselves in a manner that promotes an environment that is safe and conducive to learning and conducting other university-related business. All incidents and allegations of violent or threatening conduct by an ASU student will be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students. Such incidents will be dealt with in accordance with the policies and procedures described in Section 104-02 of the Student Services Manual (<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>).

Power Outage:

In the event of a campus power outage or other event affecting the ability of the University to deliver classes, any decision to cancel classes will be announced using the ASU emergency notification system. For this reason, it is imperative that students register with the ASU emergency notification system at: <https://cfo.asu.edu/emergency-alert>. In cases in which a limited number of buildings are affected, students should check the university website and/or call the School office at (602) 543-6050.

Emergency Evacuation Plan:

Students should be aware of the evacuation route posted on the exit door of each classroom. Students who cannot walk down stairs should notify the instructor as early in the course as possible so the instructor can provide information regarding the location of the designated meeting area on each upper floor of the building (marked with a blue sign that states Emergency Evacuation Response Area).

<u>Day</u>	<u>Date</u>	<u>Code</u>	<u>#</u>	<u>Topics</u>	<u>Ch</u>	<u>Pages</u>
Thursday	18/08			<i>Semester starts</i>		
Monday	22/08	01M	1	Intro to Physics (no lab)	1.2-6	8-17
Wednesday	24/08	01W	2	Newton's 1st law	2.2-8	23-34
Monday	29/08	02L		Lab 1: Kinematics and free-fall		
Monday	29/08	02M	3	Linear Motion	3	40-51
Wednesday	31/08	02W	4	Newton's 2nd law	4	58-67
Monday	05/09	(03M)		<i>Labor Day- no class or lab</i>		
Wednesday	07/09	03W	5	Newton's 3rd law	5	75-85
Monday	12/09	04L		Lab 2: Newton's Second Law		
Monday	12/09	04M	6	Review		
Wednesday	14/09	04W	7	Test 1		
Monday	19/09	05L		Lab 3: Collisions		
Monday	19/09	05M	8	Momentum	6	91-103
Wednesday	21/09	05W	9	Mechanical Energy	7.1-6	110-121
Monday	26/09	06L		Lab 4: Work-Energy Theorem		
Monday	26/09	06M	10	Circular Motion & Gravitation	8.1, 5, 6, 9.1-3	133-135, 145-149, 161-165
Wednesday	28/09	06W	11	Projectile & Satellite Motion	10.1-3	183-193
Monday	03/10	07L		Lab 5: Pendulums		
Monday	03/10	07M	12	Review		
Wednesday	05/10	07W	13	Test 2		
Monday	10/10	(08M)		<i>Fall Break, no class</i>		
Wednesday	12/10	08W	14	Electrostatics	22.1-6	407-415
Monday	17/10	09L		Lab 6: Electric charges and fields		
Monday	17/10	09M	15	Electric Field & Potential	22.7-9	416-424
Wednesday	19/10	09W	16	Electric Current & Circuits	23.1-5	431-437
Monday	24/10	10L		Lab 7: Circuits		
Monday	24/10	10M	17	Electric Circuits	23.6-9	437-445
Wednesday	26/10	10W	18	Magnetism	24.1-7	453-462
Monday	31/10	11L		Lab 8: Induction		
Monday	31/10	11M	19	Induction	25	470-480
Wednesday	02/11	11W	20	EM Waves & Light	26	488-495
Monday	07/11	12L		Lab 9: TBD		
Monday	07/11	12M	21	Review		
Wednesday	09/11	12W	22	Test 3		
Monday	14/11	13L		Lab 10: Mirrors & lenses		
Monday	14/11	13M	23	Optics	28.1-4, 7	520-528, 533-536
Wednesday	16/11	13W	24	Quantum Physics	32	603-612
Monday	21/11	14L		Lab 11: Radioactivity		
Monday	21/11	14M	25	Radioactivity	33.1-6	616-627
Wednesday	23/11	14W	26	Special & General Relativity	35.1-4, 36.1-2	659-667, 687-690
Monday	28/11	15L		Lab 12: Cloud chamber		
Monday	28/11	15M	27	Particle Physics	N/A	N/A
Wednesday	30/11	15W	28	Review		
Monday	05/12			Final Exam		