Physics 121 - University Physics I: Mechanics
Fall 2017

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Course Information

Lecture:	28517, TTh 5:45-7:00 pm in PS107
Lab:	28518, TTh 7:15-8:30 pm in PS107
First Class:	Tuesday 22 August
Last Class:	Thursday 7 December
Mastering Physics ID:	PETRIE4E121FALL2017
Prerequisites:	A grade of C or better in MAT220 or MAT221 or permission of Department or Division. One year of High School physics or PHY111 and PHY112 suggested but not required.

Course Description

Physics 121 is an in-person combined lab-lecture class. This means that we will be discussing the theories, laws and math behind the physics and then reinforcing these ideas via experiments that we perform in the lab. Though the course is officially split up into two 75 minute parts, one for lecture and one for lab, we will be mixing the labs and lectures in the way that is best for learning the material.

MCCCD Official Course Competencies

1. Use fundamental physical laws and principles to solve problems encountered in academic and non-academic environments.
2. Develop and use models that closely represent actual physical situations.
3. Apply problem solving techniques in terms of logic, efficiency, and effectiveness.
4. Work effectively in collaborative groups.
5. Solve practical engineering and science problems.

Textbook

Required: Physics for Scientists and Engineers, a Strategic Approach second (or third) edition, Volume 1, by Randall D. Knight
Optional: Student Workbook: Physics for Scientists and Engineers second edition, Volume 1, by Randall D. Knight.

Attendance Policy

You will be expected to attend all sessions and actively participate. If you have three or more unofficial absences the instructor may withdraw you from the course (see MCC Student Handbook). Since you will learn most of the material by interacting with the instructor, your group members and classmates, missed material will be difficult to make up. You will have to take responsibility for your own learning. If you miss a class please come and see me.

Class Format and Policies

Course content and dates may vary from what is indicated here to meet the needs of this particular class. When changes occur an email will be sent to students. Make sure that you check often the email that is listed on Canvas as that is the email that will be used to disseminate information.

Labs

Class will be held in a lab classroom so that we can take a break from lecture and practice what we are learning by performing a lab experiment. We will be completing a total of 13 labs by the end of the semester. Students will submit lab worksheets at the completion of each lab, though one lab assignment may be stretched between multiple class periods.

Homework

Generally there will be one homework assignment due each week on Thursday at 11:59 pm. The assignments will be based on material covered in class. The assignments will be completed on the Mastering Physics system. I will explain more about how to sign up for this system in class.

Quizzes

There will be a quiz at the beginning of class every 1-3 classes. The quizzes will cover material from the most recent reading assignment and material that has already been covered in class.

Exams

There will be three midterm exams and one final exam. The midterm exams will be mostly based on new material, however, due to the nature to physics the exams will be inherently cumulative. There will be one final exam during finals week that will be cumulative. Unless I give you an update as we get closer the final with be administered on Tuesday 12 December 5:45-7:35 pm in the usual room.

Grades

Grade Distribution:

Labs	25%
Homework	15%
Quizzes	10%
Midterm Exams	30% (10% each)
Final Exam	20%

Final Grade Scale:

A	$\geq 90\%$
B	80%-89.9%
C	70%-79.9%
D	60%-69.9%
F	$< 60\%$

Late Work

Generally late work will not be accepted. However I will make reasonable exceptions in extreme cases like family emergencies if I have been notified before the assignment is due. It is always better to ask me beforehand than to ask me afterwards.

Withdrawal

See your student schedule in my.maricopa.edu for the Last Day to withdraw without an instructor signature for each class in which you are enrolled. Based on the information I have the last day to withdraw with a guaranteed W grade is 9 October 2017.

Disability Services

Information for Students with Accommodation Needs: If you have a documented disability (as protected by the Americans with Disability Act) or if you are pregnant or parenting (as protected under Title IX) and would like to discuss possible accommodations, please contact the MCC Disabilities Resources and Services Office at 480-461-7447 or email drs-frontdesk@mesacc.edu.

Access to Course Materials: If you are experiencing difficulty accessing course materials because of a disability please contact your instructor. All students should have equal access to course materials and technology.

Academic Dishonesty

Academic misconduct and dishonesty includes, but is not limited to, cheating, plagiarism, excessive absences, use of abusive or profane language, and disruptive and/or threatening behavior. All instances of academic dishonesty will be reported to the Chair of the Physical Sciences Department and other appropriate authorities. Students displaying acts of academic dishonesty are subject to grade adjustment, course failure, probation, suspension, or expulsion. See the student handbook for more information regarding cases of academic misconduct.

Statement of Student Responsibilities

It is your responsibility to understand the policies listed in this syllabus as these are the guidelines that your instructor will follow for grading, attendance, etc. It is also your responsibility to read and understand the college policies included in the student handbook as they may apply to you in the case of an incomplete grade, withdraw for failure to attend, etc.

MCC Student Handbook

Tuition Charges and Refunds

Students who officially withdraw from credit classes (in fall, spring, or summer) within the withdrawal deadlines listed below will receive a 100% refund for tuition, class and registration processing fees. Deadlines that fall on a weekend or a college holiday will advance to the next college workday except for classes fewer than 10 calendar days in length or as specified by the college. Calendar days include weekdays and weekends. Refer to individual colleges for withdrawal and refund processes. Never attending is not an allowable refund exemption or an excuse of the debt incurred through registration.

**Course fees and registration processing fees will be refunded only if the student qualifies for a 100% refund. Debts owed to any MCCCD college must be satisfied before any refunds are paid to the student. Refunds for students receiving federal financial assistance are subject to federal guidelines. Requests for exceptions to the refund policy must be filed within one year from the semester in which the course was taken.*

Fall 2017 Schedule

Date	Reading	Lab	Topic
22 Aug	1.1-3	1	Intro; Motion Diagrams; x vs t
24 Aug	1.4-5	1,2	Velocity; Acceleration
29 Aug	1.6-7,2.1	2	1D Motion; Problem Solving
31 Aug	2.2-4	3	Free Fall Inst. Vel.; Kinematic Eqs.
5 Sep	2.5-7	3	Free Fall; Inclined Plane
7 Sep	3	V1-3	Vectors
12 Sep	4.1-3	4.1	2D Acc; 2D Motion; Projectiles
14 Sep	4.4-6	4.2	Uniform Circular Motion; Nonuniform Circular Motion
19 Sep	N/A		Review; Exam #1 (covers chapters 1-4)
21 Sep	5.1-3	6.1	Force
26 Sep	5.4-7	5.1-2	Newton's 1/2 Laws; Free-Body D.
28 Sep	6.1-3	5.3,V6	Equilibrium; N2L; Weight
3 Oct	6.4-5	7	Contact Forces Friction; Drag
5 Oct	7.1-3	7	Newton's 3rd Law
10 Oct	8.1-3	7,6.2	2D Dynamics; Uniform Circular Motion; Circular Orbits
12 Oct	N/A		Review; Exam #2 (covers chapters 5-8)
17 Oct	9.1-2	8	Momentum and Impulse
19 Oct	9.3-5	9	CoM; Inelastic Collisions; Explosions
24 Oct	10.1-3	11	Conservation of Energy Energy; KE; (G)PE
26 Oct	10.4-6	13	Hooke's Law; Elastic PE; Energy Diagrams
31 Oct	11.1-3	10	Work
2 Nov	11.4-6	10	Work; PE
7 Nov	N/A		Review; Exam #3 (covers chapters 9-11)
9 Nov	12.1-4	12	Rotational Motion; Moment of Inertia
14 Nov	12.5-6	12	Torque; Rotational Dynamics
16 Nov	12.7-8	12	Static Equilibrium; Rolling
21 Nov	12.10-11	L	Angular Momentum
23 Nov	N/A		Thanksgiving
28 Nov	13.1-3		Isaac Newton; Law of Gravity
30 Nov	13.4-6		g; G; GPE; Orbits
5 Dec	TBD		Catch-up day
7 Dec	TBD		Review; Oscillations or some other cool topic
12 Dec	N/A		Final Exams (covers chapters 1-13 with emphasis on 12-13)
14 Dec	N/A		N/A

**Dates and content are subject to change as needed throughout the course.*

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Physics 121 Syllabus Agreement

I have read and understand the syllabus for physics 121 section 28517 (and 28518) of this document and agree to the terms therein.

Signature: _____

Print Name: _____

Date: _____