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PHYS 170 University Physics

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University Physics I
PHYS 170 - Fall 2016 - LND 101

Instructor: Dr. Justin J. Link

Phone: 745-2854

Office Hours: To be announced & by appt.

Office: LND 108

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Course Description: This is a calculus based introductory physics class covering topics including linear and nonlinear motion, Newton's Laws, energy, momentum, conservation laws, equilibrium and elasticity, gravitation, and fluids. This course is a natural science elective and fulfills 3 of the 6 core science elective credit hours required in the university core and is a prerequisite of PHYS 172. Students are **expected** to have a solid working knowledge of high school algebra, geometry, and trigonometry.

Text: Sears & Zemansky's University Physics with Modern Physics 14th ed. by Young and Freedman a companion resource can be found on MasteringPhysics[®] which will be found in My Lab & Mastering[®] by Pearson. Lecture notes, homework solutions, practice problem solutions, syllabi, and other appropriate materials will be available on our course webpage in Canvas: <http://canvas.xavier.edu>

Natural Science Elective Statement: The natural sciences extend beyond an exploration of the natural world - they also inform us about our interrelationship to it. In this science elective course, you will improve your understanding of the scientific method and your ability to analyze claims and information regarding science through experiences in lectures and labs. In addition to knowing more about a specific scientific discipline, you will be better able to evaluate the use of science in society and everyday life in an informed manner.

Student Learning Objectives: This course and its co-requisite lab are part of the Xavier Core Curriculum, which aims to develop people of learning and reflection, integrity and achievement, in solidarity for and with others. They address the following core learning objectives at the intermediate level:

- 1a: Students recognize and cogently discuss significant questions in the humanities, arts, and the natural and social sciences.

And it includes the following core learning objective(s) at the introductory level:

- 5b: Students examine the interconnections between humans and the natural environment.

Course Principles: Through the completion of this course, students

- Will investigate in-depth content of linear and circular motion, Newton's Laws, energy, momentum, conservation laws, static equilibrium, and gravitation in a manner that fosters critical thinking and problem solving skills.
- Will be able to apply the ideas discussed in the course to solve qualitative and quantitative problems.
- Students will apply methods, procedures, ideas, and concepts appropriate to the above mentioned material.
- Will gain a greater appreciation for the rigor, meticulousness, and applications of the discussed scientific material.
- Experience the satisfaction of realizing that physics is everywhere in our daily lives and consider societal impacts of the science.

The instructor reserves the right to alter this syllabus if circumstances dictate

Homework: We will be completing homework in two manners. Each assignment will require a handwriting solution to at least one problem and the remaining will be online homework supplied by MasteringPhysics[®]. Although this is only homework, I strongly encourage you to still write it out as if you were turning it in, this will make your work more organized and easier to study from in the future. You can access the website through your course webpage or www.pearsonmylabandmastering.com. Instructions to login are found on your course webpage in Canvas. The Mastering course ID is link70737 and course name is PHYS 170 F16. You are responsible for completing each online assignment on the **due date by 11am** and **no late homework will be accepted**, however, extra credit will be made available on each assignment. Homework solutions to the end of chapter problems will be posted on your course webpage. You are encouraged to explore the homework in a group setting but each student is responsible for their own assignment. You are strongly encouraged to work out and show all steps for each problem on a separate sheet of paper and keep it so that you have it to study with for tests.

Online solutions may become available and you may be tempted to use them to assist you in your homework, however, we highly suggest for you not to do so. We have seen students use them and they do not struggle on homework and therefore struggle for the first time on a test. This method is setting yourself up for failure from the start! So, please do not use the online solutions when you complete your homework, it will not get you very far in your knowledge of physics.

Practice Problems: These problems will be assigned in MasteringPhysics[®] but not collected for credit. Solutions to the end of chapter problems will be posted on your Canvas course webpage before the assignment is due. These are to assist you building your skills to solve a variety of problems. Think of these as an extension of the example problems that are found in your text. We suggest that you attempt these problems before you attempt the homework.

Online Responses & Calculators: MasteringPhysics[®] will be used for online responses to questions/topics covered in assigned readings. The responses will be every weekend and are due at 2 AM on the first day of the week. Typically, they will be posted Friday but you will always have at least 30 hours to post a response. An email will be sent informing you of the posted response. Responses will be graded for completion and 13 out of 15 must be completed to obtain full credit. You may use your own calculators but if any extra information is found on them during an exam, it is academic misconduct and appropriate action will take place.

Tests and Final Exam Policy:

Tests and the final exam (comprehensive) will cover material, problems and concepts presented in lectures, assigned for homework, online responses and practice problems.

Under conditions of hardship, a student who misses an exam or fails to turn in homework must submit a full written and signed explanation for their absence (including appropriate documentation) in a timely fashion. Failure to make prompt notification will lead to an unexcused absence regardless of the validity of the excuse. If the absence from an exam is excused, the student will be allowed to use the grade on the final exam to substitute for the missing grade. If a homework is not turned in due to an excused reason, it will not be used to factor the final homework value.

If you cannot turn in a homework or take an exam due to a conflict with a University sponsored event that you are required to attend, you must notify me prior to the event so that suitable arrangements can be made.

Tentative test dates & material: Sept. 21 (Chpts 1-4), Oct. 21 (Chpts 5, 6, 7, 8),
Nov. 18 (Chpts 9,10, 11), Final (Cum. & Chpts 12, 13, 14)

Final exam dates:

11:00 section: 10:00 – 11:50, Wednesday, December 14th
12:00 section: 12:00 – 1:50, Monday, December 12th

Grading: Semester grades will be based on:

Homework	10%
Online Responses	5%
Tests	60% (20% each)
Final exam	25%

The homework value is based on the percentage of total possible homework points that you receive. The exam values are based on your score, but may be adjusted using a curve involving test corrections. Your total grade for the course is weighted as listed above and follows the grading scale below.

	87.0-89.9 B+	77.0-79.9 C+	67.0-69.9 D+
93.0-100 A	83.0-86.9 B	73.0-76.9 C	60.0-66.9 D
90.0-92.9 A-	80.0-82.9 B-	70.0-72.9 C-	0-59.9 F

Class Attendance, Communication, & Academic Misconduct: Attendance, though not taken, is mandatory. You are responsible for the information presented in the lectures and for any assignments made during the class time. If you are late to class or absent, you are responsible for obtaining any pertinent information that was given during class. All email correspondence **must** be from your Xavier University account. No grades will be discussed via email. Academic misconduct will not be tolerated and disciplinary action will be pursued according to the student handbook.

If religious observance will cause you to be absent from class or otherwise affect your ability to complete academic assignments, you must notify the instructor in advance and make necessary arrangements to complete the entire course.

Additional Material: Supplemental material will be supplied for your learning assistance on your Canvas course webpage.

Courtesy: Please leave your cell phones, iPods, iPads, i-Whatever Apple comes up with next, and any tablets turned off during class. Please try not to leave the room during class unless it is a real emergency.

Student Support

Office of Academic Support: The Office of Academic Support offers tutoring, Supplemental Instruction (SI), and study groups. For information about these services, contact Stephanie Daniels at danielss3@xavier.edu.

Students with Disabilities: Any student who feels he/she may need an accommodation based on the impact of a documented disability should notify the course instructor and contact Cassandra Jones in the Office of Disability Services at 745-3280 or e-mail jonesc20@xavier.edu to coordinate reasonable accommodations.

The instructor reserves the right to alter this syllabus if circumstances dictate

Mental Health Resources: Life at college can get very complicated. Students sometimes feel overwhelmed, lost, experience anxiety or depression, struggle with relationship difficulties or diminished self-esteem. However, many of these issues can be effectively addressed with a little help. McGrath Counseling Services (located in the McGrath Health and Wellness Center) and the Psychological Services Center (located at the Sycamore House) help students cope with difficult emotions and life stressors. McGrath Counseling Services and the Psychological Services Center are staffed by therapists, counselors, and other staff who are attuned to the needs of college students. The services are FREE and completely confidential. Find out more at <http://www.xavier.edu/health-wellness/counseling/index.cfm> and <http://www.xavier.edu/psychologicalservices/welcome.cfm> or by calling (513) 745-3022 for McGrath or (513) 745-3531 for Psychological Services Center.

Student Success: For further assistance in taking advantage of all that Xavier has to offer you, please see the Office of Student Success. The Staff in the Office of Student Success is available to assist students to make the most of their Xavier experience. Personal staff consultations, success coaching, referrals to on-campus Solution Centers, and guiding students to effectively navigate their college experience are central to our work. Please visit www.xavier.edu/student-success to learn more or visit us in the Conaton Learning Commons in room 514, or we can be reached at 513-745-3036 and at sudentretention@xavier.edu.

Commuter Students: Commuter Students can have special parking and weather challenges at times during the semester. Xavier offers an XU Alert Me text/email notifications of weather related delays and closures at the following link: <https://www.getrave.com/login/xavier>. Be proactive in introducing yourself to your instructors to make them aware of your commute to campus. You are encouraged to explain to them that you will do everything possible not to allow weather to impact your attendance, but that you will make safe decisions involving your commute and will communicate your decisions immediately. It is your responsibility to follow-up with your professors and to find out what you need to do to make up the missed class. You are highly encouraged to contact a fellow classmate to obtain missed class notes. Note that there are limited parking spaces during the snow removal process, which can make parking a challenge. Be extra careful of snow and ice hazards. If you have further questions about snow emergencies and school cancellations, please email commuterservice@xavier.edu and read the inclement weather policy in the student handbook: <http://www.xavier.edu/handbook/general/inclement-weather-policy.cfm>

Inclusivity Statement: I am committed to providing an atmosphere for learning that respects diversity and in which all students feel comfortable and safe to learn. In order to build a classroom community, I ask that students:

- share their unique experiences, values and beliefs;
- be open to the views of others;
- honor the uniqueness of their peers;
- appreciate the opportunity that we have to learn from each other in this community;
- communicate in a respectful manner;
- keep confidential discussions that the community has of a personal (or professional) nature;
- utilize this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the Xavier community.

University Policy Regarding Gender-based Discrimination and Violence:

Xavier University seeks to provide an environment that is free from discrimination based on sex and/or gender. If you have experienced sex discrimination, including sexual violence, intimate partner violence, stalking, or sexual harassment, we encourage you to seek support from Xavier University Page 5 of 6 Xavier's **confidential** Advocacy & Prevention Coordinator and to report to Xavier's Chief Title IX Officer and/or Xavier University Police Department. Xavier faculty is committed to supporting students and promoting a safe, respectful environment. Therefore, if a student shares information regarding sex discrimination with a Xavier faculty member, that faculty member will share this information with Xavier's Chief Title IX Officer so that she can provide you with comprehensive information on your rights, options, and available resources. When sharing information with a faculty member, you may choose to withhold identifying information until you have spoken to a confidential resource to learn all options and resources. For a list of confidential and non-confidential resources, please see <http://www.xavier.edu/titleix/documents/22015-16XavierGender-BasedSexualMisconductReportingSupportOptions.pdf>