Course ID:	Course Title:	Fall 2022
Phys111	Mechanics	Prerequisite: Pure Math 30 (Physics 30 recommended)
		Credits: 3

Class Information		Instructor Information		Important Dates	
Days:	Tuesday/ Thursday	**Instructor:**	Dr. Mehdi (Nader) Dehghany	**First day of classes:**	Wednesday, Sep. 7
Time:	17:30 -18:45	**Email:**	Mehdi.dehghany@ambrose.edu	**Last day to add/drop, or change to audit:**	Sunday, Sep. 18
Room:	In-person A2210	**Google Meet Link**	**https://meet.google.com/phc-xrwq-yyb**	**Last day to withdraw from course:**	Monday, Nov. 21
Lab/ Tutorial:	Friday 17:30-19:30	**Office:**	L2091	**Last day to apply for coursework extension:**	Monday, Nov. 28
	Online - using google Meet link	**Office Hours:**	Friday 17:00-17:30 - Online using Google Meet link	**Last day of classes:**	Monday, Dec. 12
Final Exam: In-person final exam on Wednesday, December 14th from 6:30 pm to 9:30 pm, Room: A2210				There will be no classes on: Friday, Sep.30th Tuesday, Nov.8th Thursday, Nov.10th Friday, Nov.11th	

COURSE DESCRIPTION

This course teaches concepts in motion and kinematics, forces and acceleration, energy, momentum, and torque. There is a lab component for this course.

EXPECTED LEARNING OUTCOMES

This course introduces Newtonian point mechanics. Vectors, motion in one and two dimensions including projectile and circular motion are discussed in detail. Newtons laws of motion, forces, the concepts of work and energy, impulse and momentum plus torque are covered. Both conceptual understanding and problem-solving skills will be emphasized. Calculus will not be used, but extensive use will be made of algebra and trigonometry. Tutorial exercises provide further insight into these topics.

TEXTBOOKS

Physics for scientists and Engineers: A strategic approach; by Randall D. Knight (5th edition) – Link to the e-book and the access instruction is available on the Moodle website.

COURSE SCHDEULE

Chapter One (Concept of Motion): position, displacement, velocity, speed, units, trigonometry, scalars, vectors.
Chapter Two (Kinematics in One Dimension): 1-D motion, graphical relationships, acceleration, kinematic equations, free fall.
Chapter Three (Vectors and Coordinate systems, Motion in Two Dimension): addition of vectors, graphical and component methods,
Chapter Four (Kinematics in Two Dimension): kinematics of 2-D motion,2-D projectile motion,
Chapter Five (Forces and Newton's Laws of Motion): forces, Newtons Laws, free-body diagrams.
Chapter Six (Dynamics I: Motion along a line): equilibrium, mass and weight, apparent weight, normal forces, friction and drag,
Chapter Seven (Newton's Third Law): Interacting objects and drawing Free-Body diagram, Ropes and pulleys with examples
Chapter Eight (Dynamics II: Motion in a plane): angular velocity, uniform circular motion, period, centripetal acceleration and force, Circular orbits
Chapter Nine (Work and Kinetic Energy): work done by a force, kinetic energy, Work and Kinetic Energy theorem,
Chapter Ten (Potential Energy): Gravitation potential energy, Mechanical energy, conservation of mechanical energy, Conservative and non-conservative forces, power,
Chapter Eleven (Impulse and Momentum): Momentum, Impulse, 1-D Collisions and the law of conservation of total momentum,

ASSESSMENTS:

Bi-Weekly Online Assignment	**15%**
Tutorials	**10%**
In-person Midterm Exam One (Thursday, October 27th – 17:30 – 18:45)	**20%**
In-person Midterm Exam Two (Thursday, November 24th – 17:30 – 18:45)	**20%**
In-person Final Exam (DEC.14th)	**35%**

Bi-weekly online assignments: In this course, you will receive online assignment based on the book chapters covered, course notes and class discussions, on the Moodle website. **Online assignments are due Saturday nights at 11:59 pm once they become available.** The **first online assignment is due at 11:59 pm on September 24th**.

Tutorials: Questions/problems are selected from the textbook to be tackled during tutorial. Your work should be hand-written on paper, then scanned in PDF file and uploaded on the Moodle course website, **until the end of the day on Friday**.

Midterm exams: 50% mark of the midterm exams will be questions similar to the examples in chapters and end of the chapter questions and problems. Thus, it is strongly recommended to read the text book and practice questions at the end of each chapter on a regular plan. **These two exams are NOT cumulative**.

Final exam: It will be on **December 14th from 6:30 pm to 9:30 pm.** The room is **A2210**. Deferred exams will only be granted once full documentation (see the current Ambrose University Calendar) has been received and verified by the Department. Students must ensure they are available for the final exam. Vacations, flights, employment, etc. are not valid reasons to request a deferred examination. A sample final exam will be posted on the Moodle course website. **The final exam IS cumulative.**

GRADE SUMMARY:

The available letters for course grades are as follows:

Letter Grade	Description
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

95-100	**A+**	**82-85.9**	**B+**	**70-73.9**	**C+**	**58-61.9**	**D+**
90-94.9	**A**	**78-81.9**	**B**	**66-69.9**	**C**	**54-57.9**	**D**
86-89.9	**A-**	**74-77.9**	**B-**	**62-65.9**	**C-**	**0-54**	**F (Fail)**

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

OTHER:

Physics can be difficult. To do well in Physics 111, it is not enough just to come to lectures. You need to come to lectures already **prepared** by having read the assigned sections of the textbook. You might not understand everything on the first reading, but it will help you make sense of the material when we talk about it in lectures.

Memorization plays only a small part in physics. The key to success in physics is **understanding**. Understanding is developed by **participation and engaging in problem solving**. Physics 111 is, therefore, an activity-based course, with activities such as demonstrations, homework solving and problem-solving sessions. This means that you will be doing a great deal of your learning while participating in activities in class. If you are not in lectures – both physically **and** mentally – you are missing out on **your** learning.

Understanding is also developed by **problem solving**. You should work through the weekly problem sets, tutorial problems, and end-of-the-chapter questions and problems. Do not be afraid to make mistakes, but do not stop until you get things right. Bring your questions to tutorials and office hours and ask for guidance if you need to – that is what they are for.

SOLUTION-PROVIDING WEBSITE: **This is an important note to all students in this course.**

Academic Integrity is essential to all elements of education and scholarship. Without integrity, academic qualifications cannot be relied upon, research cannot be trusted, and degrees, diplomas, and certificates lose their value. Your instructor is committed to the fundamental values of honesty, trust, fairness, respect and responsibility, as any other faculty member at Ambrose University. While I respect student's honest academic efforts toward this course, YOUR INSTRUCTOR WILL BE ACTIVELY MONITORING PROBLEM-SOLVING WEBSITES, FOR ANY EVIDENCE OF MISCONDUCT. There will be ZERO TOLERANCE toward any act of misconduct in this course.

List of recommended questions and problems

Chapter	Conceptual questions	Exercises and Problems
1	**3, 4, 5, 6,7,8**	**1, 2, 3, 8, 12, 13, 14, 16, 18, 19, 20, 34, 37, 40, 42, 59, 60**
2	**1, 3, 4, 5, 6, 7,8, 10**	**4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18, 19, 21, 22, 25, 47, 49, 51, 55, 57, 68**
3	**8**	**1, 2, 3, 5, 6, 7, 19, 20, 21, 22, 24, 26,**
4	**5, 6, 7**	**11, 12, 14, 15, 16, 17, 49, 50, 51, 52, 55, 57, 82**
5	**1, 2, 4, 9, 11**	**1, 4, 5, 17, 18, 19, 43, 45, 46, 47, 49, 51, 52, 54, 56**
6	**12, 13, 16**	**1,2, 5, 11, 14, 15, 19, 22, 26, 27, 31, 39, 56, 57, 58**
7	**7, 8,**	**4, 5, 6, 7, 15, 17, 23, 33, 35, 53**
8	**1, 2, 3, 5**	**6, 10, 11, 13, 14, 17, 21, 25, 48**
9	**3, 4, 9**	**2, 5, 9, 18, 19, 43, 46**
10	**3, 4**	**3, 8, 10, 11, 70**
11	**1, 2, 3, 10**	**1, 3, 5, 8, 11, 14, 19, 20, 29, 40, 52**

Ambrose University Academic Policies

Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline;** please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devises in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period

unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Mental Health Support

All of us need a support system. We encourage students to build mental health supports and to reach out when help is needed.

On Campus:

- Counselling Services: ambrose.edu/counselling
- Peer Supportive Listening: One-to-one support in Student Life office. Hours posted at ambrose.edu/wellness.
- For immediate crisis support, there are staff on campus who are trained in Suicide Intervention and Mental Health First Aid. See ambrose.edu/crisissupport for a list of staff members.

Off Campus:

- Distress Centre - 403-266-4357
- Sheldon Chumir Health Care Centre - 403-955-6200
- Emergency - 911

Sexual Violence Support

All staff, faculty, and Residence student leaders have received *Sexual Violence Response to Disclosure* training. We will support you and help you find the resources you need. There is a website with on and off campus supports – ambrose.edu/sexual-violence-response-and-awareness.

Off Campus:

- Clinic: Sheldon Chumir Health Centre - 403-955-6200
- Calgary Communities Against Sexual Abuse - 403-237-5888

Note: Students are strongly advised to retain this syllabus for their records.