

University of Ottawa  
**DEPARTMENT OF PHYSICS**  
**PHY1321B and PHY1331B**  
*Principles of Physics I*  
*Fall 2019*  
**(Sept. 4 – Dec.3)**

**Instructor:** Prof. Andrzej Czajkowski  
**Office:** STEM 431  
**Email:** Fall2019.phy1321.31.ab@gmail.com  
**Class Website:** PHY1321 accessed through BRIGHTSPACE / only registered students may access it! /

**EMERGENCY Phone:** 562 5800 ext: 6760

**Office hours:** If you have just one quick question regarding the course, please wait for me after lecture in the main LOBBY of MRN Hall (near the main entrance to the building), and I will answer it right away. For more complex issues please see me during my office hours:  
MON 14:30 – 15:30                      TUE 10:00 – 11:00                      WED 13:00 – 14:00

### LECTURES:

<b>TUESDAY</b>	<b>8:30 – 9:50</b>	<b>MRN 150</b>
<b>FRIDAY</b>	<b>10:00 – 11:20</b>	<b>MRN 150</b>
<b>THURSDAY</b>	<b>17:30 – 18:50</b>	<b>MNT 203 (TUTORIAL 1331Bonly)</b>

### DGD Schedule for PHY1321/1331A

TUESDAY	10:00–11:20	Y1	FSS 1030	88 SEATS		
TUESDAY	10:00–11:20	Y2	MNO E217	77 SEATS	OR HNN 013	102 SEATS
TUESDAY	10:00 - 11:20	Y3	UCU 205	50 SEATS		
TUESDAY	10:00 - 11:20	Y4	TBT 323	54 SEATS		
WEDNESDAY	10:00 - 11:20	Y5	DMS 4120	68 SEATS		
WEDNESDAY	10:00–11:20	Y6	DMS 4170	63 SEATS		
MONDAY	14:30- 15:50	Y7	LMX 360	44 SEATS		
FRIDAY	13:00-14:20	Y8	FTX 359	63 SEATS		

**It does not matter which group is attended!**

DGD sessions are not mandatory but they are strongly recommended.

Their goal is to further help you in your problem-solving skills. **DGD are conducted by the Graduate Assistants.**

**Test Dates:**

Test 1    Saturday                      OCT 5    9:30 – 11:30    MRN150; CRX C240; STE G0103; STE H0104; STE A0150; STE B0138  
**Details of the classrooms assignment will be posted online.**

Test 2    Saturday                      NOV 16    9:30 – 11:30    MNT203; MNT202; STE G0103; STE H0104; STE A0150; STE B0138  
**Details of the classrooms assignment will be posted online**

**The actual writing time for each test will be 100 minutes.**

**The remaining time is dedicated to the distribution and collection of the test material.**

FINAL EXAM:                              3hrs CLOSED BOOK. TIME AND PLACE TBA by THE FACULTY OF SCIENCE

**COURSE MARK COMPONENTS:**

Assignments TOTAL:	10 %	(A assignment grade out of 100)
2 Midterms	30 %	(M midterm grade out of 100)

Final Test                      50% -- 60 %              (F final exam out of 100)  
*Extra Credit*                      0% -- 10-%              (B this is bonus that subtracts weight from the final exam)

**COURSE GRADE CG = 0.1 x A + 0.3 x M +(0.60 – 0.01xB) x F + B**  
 LABORATORY L ( out of 100%)

**FINAL GRADE ( TO FACULTY) = 0.8 CG+0.2L**

**Letter Grades submitted to Faculty:**

90-100	A+	85-89.99	A	80-84.99	A-
75-79.99	B+	70-74.99	B	66-69.99	C+
60-64.99	C	55-59.99	D+	50-54.99	D
40-49.99	E	0-39.99	F		

**ASSIGNMENTS:**

There will be at least ten weekly assignments. Each assignment comprises 5 to 7 problems. Each problem is worth 4 points. The assignments are available as pdf files. The assignment sheets need to be printed out and filled. The completed assignments will have to be returned to the drop-off box in the STEM BLD (3rd floor) by the time specified (typically by Friday 6PM). There might be one or two online assignments (to be solved on the BrightSpace) with more MC questions to practice. The Assignment mark will be established based on total score on all the assignments.

NOTE: It takes 10 working days to mark the papers, and so you should not expect the marked assignment to be available sooner than 3 weeks from the day it was posted! Solutions will be posted within few days from the deadline. I suggest making copy of one’s assignment, prior to submitting it, for the purpose of comparing it with the solutions.

**PHYSICS LABORATORY:**

**The Lab is run independently from the rest of the course.** To learn about the duties and scheduling please visit the laboratory website on Brightspace. After the semester is over the final grade for the whole course will be calculated using following scheme:

**0.80 x (Course Mark in % out of 100) + 0.20 x (Laboratory Mark in % out of 100)**

**MANDATORY TEXT:**              PHY1321/31 Lecture Notes.

**RECOMMENDED READING:** Serway Jewett “Physics for Scientists and Engineers. /9<sup>th</sup> Ed. / Thomson Nelson/

Choose one of the two following options:

- Pck. 1                      Full textbook (hard copy) for students who are taking PHY1321 and are planning to take 1322 winter semester.
- Pck. 2                      VOLUME I only recommended for students who are taking PHY1321 and are **NOT** planning to take 1322 winter semester.

**COURSE CONTENT:**

<b>Thermal Physics</b> (4 .5 chapters)	I	Introduction to Thermodynamics: Temperature and Pressure. Ideal Gas Equation
	II	Internal Energy, Work and Heat First Law of Thermodynamics
	III	Heat and work in the ideal gas processes
	IV	Kinetic Theory of Gases, Equipartition Theorem.
	V	Maxwell’s Boltzmann Distribution of Speeds. Boltzmann Distribution of Energies
	VI	Heat Engines and Carnot Cycle
	VII	Second Law of Thermodynamics and Entropy

<b>Fundamentals of Mechanics</b> (6 chapters)	I	Kinematics
	II	Forces and Newton’s Laws
	III	Energy and Work
	IV	Linear Momentum
	V	Centre of Mass

<b>Rotational Mechanics</b> (2.5chapters)	VI	Rotational Dynamics I
	VII	Rotational Dynamics II

<b>Fluids Mechanics</b> (0.5 chapter)	VIII	Static Fluids and Fluid Dynamics
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**Important Rules Regarding Midterm Tests:**

**There are two tests in the fall semester together they are worth 30% of the course grade.**

The midterm with a higher score will be worth 20% of the course grade.  
The midterm with a lower score will be worth 10% of the course grade.  
Tests will be marked within 10 working days from the day they were administered (two calendar weeks!).

### **Information regarding missed Midterm Test.**

The only valid reason for missing the midterm are:  
sickness confirmed by the note from physician. (In case of serious injury and/or hospitalization – the note from the hospital).  
representing school in sport events or conference. (registered with me by Sept 30)  
observing religious holidays. (registered with me by Sept 30)

- If you missed the test - contact me as soon as you are back in school. I would prefer to see you in person – visit me with the original doctor's note (during office hours).
- I will need to have xero-copy of the doctor's note, stapled to the brief letter explaining your situation.
- Your name, student number, date of the test etc. should be stated clearly in your letter.
- I will decide on the form of the supplementary evaluation after all of the students who missed the test have contacted me.

• **Be patient – most likely your make-up midterm test will happen at the end of the semester /Last two days of classes/.**

**It is student's responsibility to attend supplementary midterm:**

**I will announce the time date and place during the lecture within last week of classes as well as on the class website.**

**Contesting the Test Mark:** • After we start the return of the examination booklets, students have one week to contest the way the test was marked. To ask for the mark review student needs to do the following:

- i) attach the examination booklet to a brief letter explaining where all the extra marks should have been awarded
- ii) put the letter and the booklet in an envelope
- iii) write student's name number and class number ( PHY1321 ) in the upper corner of the envelope. and address the envelope to Dr. A. Czajkowski, PHYSICS
- iv) deliver the envelope to the my office in STEM Building room 431, ( if I am not there slide it under the door).
- v) Your paper will reach me with the rest of my mail. I will respond to your requests within two weeks. If I need further explanation, I will contact you. If your mark is not changed, it means that no change was deemed necessary. You will need to pick your paper from my office, after the grades have been changed.

### **Comment on Cheating:**

In the instant when two identical papers are found from students sitting side by side we will naturally presume that cheating took place:

- IT IS STUDENT RESPONSIBILITY TO SIT AWAY FROM STUDYING PARTNERS DURING TEST!
- It should be remembered that the consequences of cheating during tests and examinations are much more severe than just obtaining F in the course! /Please check the regulations regarding Academic Fraud in the University of Ottawa calendar.

<http://www.uottawa.ca/academic-regulations/academic-fraud.html>

I am making these comments hoping that this issue will never have to be discussed again in our class. **(Just don't do it!)**

**What is academic fraud?** <http://www.uottawa.ca/academic-regulations/academic-fraud.html>

Academic fraud is defined as "any act by a student that may result in a distorted academic evaluation of that student or of another student." Academic fraud occurs if you do any of the following:

Plagiarize (copy) or cheat in any way (for more information on plagiarism and how you can avoid it, see the academic fraud section in the [student guides](#)).

Submit work you have not completely written yourself (with the exception of quotations and references). This can include an assignment, an essay, a test, an exam, a research report or a thesis, whether you present your work in writing, orally or in another form.

Present research data that has been falsified or made up in any way.

Attribute a statement of fact or reference to a made-up source.

Submit the same work or a large part of the same work in more than one course, or a thesis or other work that has been presented elsewhere without the prior approval of the appropriate professors or academic units.

Falsify or misrepresent an academic evaluation, using a forged or altered supporting document or facilitating the use of such a document.

Undertake any other action for the purpose of falsifying an academic evaluation.

### **SEXUAL HARRASMENT AND SEXUAL VIOLENCE**

“The University of Ottawa does not tolerate any form of sexual violence. Sexual violence refers to any act of a sexual nature committed without consent, such as rape, sexual harassment or online harassment. The University, as well as student and employee associations, offers a full range of resources and services allowing members of our community to receive information and confidential assistance and providing for a procedure to report an incident or make a complaint.

For more information, visit [www.uOttawa.ca/sexual-violence-support-and-prevention](http://www.uOttawa.ca/sexual-violence-support-and-prevention)

We all have right to live in the violence-free environment. Profanities and sexually charged language should be treated as violating our rights not to be exposed to them.

Using a foul language also desensitizes us and blurs the line between what is still acceptable and what is offensive. It is best to act in such a way as to avoid potential controversies altogether.

ROOM CAPACITIES:	SEATS	ACCOMODATES		
MRN150	420	210	*	**
CRX C240	350	175	*	
MNT 203	240	120		**
MNT 202	240	120		**
STE G0103	155	77	*	**
STE H0104	155	77	*	**
STE A0150	124	62	*	**
STE B0138	171	85	*	**
<b>TOTAL:</b>		<b>test1</b>	<b>686</b>	<b>test2: 751</b>