

# PHYS 216: University Physics 1-Physics Majors

## The Most Important Thing:

**PHYSICS. IS. AWESOME.**

Understanding how our world works is an amazing thing!!

### Class Time and Modality:

**Class Time and Location:**

PHYS 216.01:

Required class time: MWF 2:00-3:50 PM in GOS 3178

Thursday: 2:00 - 3:15 PM

Common exams for all UP1 courses are given on Tuesdays from 6:30 - 7:50 PM

**Course Mode:**

Fully in-person with required attendance

### Instructor Information:

**Instructor:**

**Your Name**

**Contact Information:**

Email: [sonsp@rit.edu](mailto:sonsp@rit.edu)

**Office Hours:**

Monday: 1:00 - 2:00 PM

Friday: 1:00-2:00 PM

An alternate time can be arranged. Please email me to arrange an alternate time.

**Instructor-Student Communication**

Emails sent via myCourses to your RIT account will be the primary method of contacting you outside of class time. All course information is housed on myCourses. You are required to check your RIT email and myCourses daily.

**Online Course Material/Course Webpage:**

myCourses will be the primary location for all course materials. We will also use ExpertTA, and Slack. More information can be found in the [Day 1 Scavenger Hunt](#).

### Course Overview:

This is the first semester of the two-semester introductory “classical physics” sequence for scientists and engineers. Topics include kinematics, Newton’s Laws, work and energy, momentum, universal gravitation, rotational motion, oscillations, and waves. These topics form the building blocks for our understanding of how our world works. Prerequisite: MATH 181. Corequisite: MATH 182 (if not taken previously). In addition to the topic-specific learning outcomes, you will continue the development of your growing analytical skills. These critical thinking skills are improving with each course you take.

Your final grade will be based on the following components, weighted as shown:

Graded Item	% of Grade
Daily Checks (Peer interaction)	10%
Problem Sets (ExpertTA)	10%
Labs	15%
Video Notes and Class Participation	5%
Exam 1	20%
Exam 2	20%
Final Exam (can also replace lowest in-semester exam if that helps you)	20%
<b>Total</b>	<b>100%</b>

## Grade Scale

I will use the +/- grading system. The following chart shows the final course percentage that will guarantee at least the letter grade shown. Finer-grained divisions in the A, B, and C ranges will only be determined after a careful analysis at the end of the semester. If the above final cutoffs change, they will only be lowered, not raised.

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Letter Grade	Minimum percentage that will guarantee that grade
A-	90.0
B-	80.0
C-	70.0
D-	60.0

## Policies Regarding Assignments, Late Work, and Make-up Exams:

**If you have a university-approved reason (ex: severe illness) for being absent for MORE than 2 consecutive class days, contact your instructor to let them know.**

### Exams:

The two in-semester exams and final exams will be open-notes, timed exams. The in-semester exams will be given during the Tuesday evening synchronous time slot reserved in SIS. The final exam date and time is TBA.

Make-up exams are provided only in **unusual circumstances for University-approved absences**. A request for a makeup exam must be submitted in writing to the University Physics 1 Coordinator, co-Coordinator, and copied to your instructor. **Submission of the request is in no way a guarantee that it will be approved.** All requests are considered on a case-by-case basis. Whenever possible, you must allow sufficient and

reasonable lead time for a considered response to your request. Request a make-up exam form from your instructor.

### **ExpertTA Problem Sets:**

Each module has an associated problem set. The lowest problem set will be dropped. You ARE allowed to get outside help on your assignments.

Problem sets that are submitted late will earn a 10% penalty per day for any portion that it late.

### **Labs:**

Labs will be done in groups. There will be individual contributions and group contributions. Your individual grade on each lab report is dependent upon your active participation in the group work.

No late labs will be accepted except in unusual circumstances. Request a late lab submission by contacting your professor and cc-ing your entire lab group. Labs can only be made up for excused absences.

### **Video Notes:**

Notes are uploaded every class day. No late notes are accepted. You may also periodically receive credit for active class engagement and participation. This involves working with your peers during our synchronous class in the assigned breakout rooms. Two video notes will be dropped.

### **Daily Checks:**

Daily checks are due on the day indicated without exception. No late daily checks will be allowed. Three daily checks will be dropped. The daily checks will be completed during class.

## REQUIRED:

- Daily access to myCourses and RIT Email account
- Required Problem Set and Assessment Platform: ExpertTA. (Registration details are in the [Day 1 Scavenger Hunt](#).)

## OPTIONAL:

- Free Textbook: We use a free online book found at: [openstax.org/books/university-physics-volume-1/pages/1-introduction](https://openstax.org/books/university-physics-volume-1/pages/1-introduction).

WEEK	DATE	DAY	University Deadline /Activity	Daily Topic	Videos Due Before Class (myCourses Daily Checks on this material, and notes uploaded before each class)	Module Problem Sets to work on that class day	Daily Check #	Problem Set Due Dates
1	10-Jan-22	Mon		Course Intro	1.1 - 1.2	1	1	
	11-Jan-22	Tues						
	12-Jan-22	Wed		Vectors	1.3	1	2	
	13-Jan-22	Thurs						
	14-Jan-22	Fri		1D Motion	2.1 - 2.3	2	3	
	15-Jan-22	Sat						
	16-Jan-22	Sun						
2	17-Jan-22	Mon		No Class, MLK				
	18-Jan-22	Tues	Last day add/drop					Module 0 and 1 Problem Sets
	19-Jan-22	Wed		1D Motion	2.4 - 2.5	2	5	
	20-Jan-22	Thurs						
	21-Jan-22	Fri		2D Motion	3.1 - 3.2	3	6	
	22-Jan-22	Sat						
	23-Jan-22	Sun						
3	24-Jan-22	Mon		2D Motion, with circular	3.3 - 3.4	3	7	
	25-Jan-22	Tues						Module 2 Problem Set
	26-Jan-22	Wed		Full Day Lab 1 - Kinematics	none	lab	lab	
	27-Jan-22	Thurs						
	28-Jan-22	Fri		Newton's Laws	4A.1 - 4A.3	4A	8	
	29-Jan-22	Sat						
	30-Jan-22	Sun						
4	31-Jan-22	Mon		Applying N2L	4A.4 - 4A.5	4A	9	
	1-Feb-22	Tues						Module 3 Problem Set
	2-Feb-22	Wed		N2L with friction, ramps, circles	4B.1 - 4B.2	4B	10	
	3-Feb-22	Thurs						
	4-Feb-22	Fri		N2L Continued	4B.3 - 4B.4	4B	11	
	5-Feb-22	Sat						
	6-Feb-22	Sun						
5	7-Feb-22	Mon		Full Day Lab 2 - N2L and Friction	none	lab	lab	
	8-Feb-22	Tues						Module 4A and 4B Problem Sets
	9-Feb-22	Wed		Work-KE	5.1 - 5.4	5	13	
	10-Feb-22	Thurs						
	11-Feb-22	Fri		Energy and PE diagrams	6.1 - 6.4	6	14	
	12-Feb-22	Sat						
	13-Feb-22	Sun						
6	14-Feb-22	Mon		CoE	6.5 - 6.7	6	15	
	15-Feb-22	Tues						Module 5 Problem Set
	16-Feb-22	Wed		CoE and vertical circles	7.1 - 7.2	7	16	
	17-Feb-22	Thurs						
	18-Feb-22	Fri		Full Day Lab 3 - Vertical Circles			17	
	19-Feb-22	Sat						
	20-Feb-22	Sun						Module 6 and 7 Problem Sets
7	21-Feb-22	Mon		Exam review			18	
	22-Feb-22	Tues		Exam 1 - 6:30 - 8:00 PM on myCourses				
	23-Feb-22	Wed		Impulse-Momentum	8.1 - 8.4	8	20	
	24-Feb-22	Thurs						
	25-Feb-22	Fri		CoLM	9.1 - 9.3	9	21	
	26-Feb-22	Sat						
	27-Feb-22	Sun						
8	28-Feb-22	Mon		Combining CoLM and CoE	9.4 - 9.5	9	22	
	1-Mar-22	Tues						Module 8 Problem Set
	2-Mar-22	Wed	Career Fair	cyclic learning day/career fair	none			
	3-Mar-22	Thurs						
	4-Mar-22	Fri		Full Day Lab 4 - Bullet/Block	none	lab	lab	
	5-Mar-22	Sat						
	6-Mar-22	Sun						
	7-Mar-22	Mon		No class, Spring Break				
	8-Mar-22	Tues						
	9-Mar-22	Wed						
	10-Mar-22	Thurs						
	11-Mar-22	Fri						
	12-Mar-22	Sat						
	13-Mar-22	Sun						
9	14-Mar-22	Mon		CM and Rotational Kinematics	10.1 - 10.5	10	24	
	15-Mar-22	Tues						Module 9 Problem Set
	16-Mar-22	Wed		MOI	11.1 - 11.2	11	25	
	17-Mar-22	Thurs						
	18-Mar-22	Fri		MOI	11.3	11	26	
	19-Mar-22	Sat						
	20-Mar-22	Sun						
10	21-Mar-22	Mon		N2L with rotation, single object	12A.1 - 12A.3	12A	27	
	22-Mar-22	Tues						Module 10 and 11 Problem Sets
	23-Mar-22	Wed		N2L with rotation, multi objects	12B.1 - 12B.2	12B	28	
	24-Mar-22	Thurs						
	25-Mar-22	Fri		Statics	12C.1 - 12C.2	12C	29	
	26-Mar-22	Sat						

	27-Mar-22	Sun						
11	28-Mar-22	Mon		Full Day Lab 5 - N2L with Rotation	none	lab	lab	
	29-Mar-22	Tues						Modules 12A and 12B Problem Sets
	30-Mar-22	Wed		Energy in Rotation	13.1 - 13.2	13	31	
	31-Mar-22	Thurs						
	1-Apr-22	Fri	Last day withdraw	CoAM	14.1 - 14.3	14	32	
	2-Apr-22	Sat						
	3-Apr-22	Sun						
12	4-Apr-22	Mon		more CoE and CoAM	14.4	13, 14	33	
	5-Apr-22	Tues						Modules 12C and 13 Problem Sets
	6-Apr-22	Wed		Full Day Lab 6 - CoE and CoAM	none	lab	lab	
	7-Apr-22	Thurs						
	8-Apr-22	Fri		cyclic learning	none		35	
	9-Apr-22	Sat						
	10-Apr-22	Sun						Module 14 Problem Set
13	11-Apr-22	Mon		Exam review			36	
	12-Apr-22	Tues		Exam 2 - 6:30 - 8:00 PM on myCourses				
	13-Apr-22	Wed		Simple Harmonic Motion	15A.1 - 15A.3	15A	37	
	14-Apr-22	Thurs						
	15-Apr-22	Fri		Pendulums, pendulum lab	15B.1 - 15B.2	15B	38	
	16-Apr-22	Sat						
	17-Apr-22	Sun						
14	18-Apr-22	Mon		Traveling Waves	16.1	16	40	
	19-Apr-22	Tues						Module 15 Problem Set
	20-Apr-22	Wed		Wave interference, standing waves	16.2 - 16.3	16	41	
	21-Apr-22	Thurs						
	22-Apr-22	Fri		Full Day Lab 7 - Waves	none	lab	lab	
	23-Apr-22	Sat						
	24-Apr-22	Sun						Module 16 Problem Set
15	25-Apr-22	Mon		Last day Recap/Review	none	1 to 16	42	
	29-Apr-22	Friday		Cumulative Final Exam - 4:15 - 6:45 PM on myCourses				