



# IB Physics SL Year 1 / CiS Physics Roosevelt High School



2021-22

**Instructor:** Dan Berliner ([daniel.berliner@mpls.k12.mn.us](mailto:daniel.berliner@mpls.k12.mn.us))

Room 283

**Teacher Page:** [http://roosevelt.mpls.k12.mn.us/berliner\\_dan\\_2](http://roosevelt.mpls.k12.mn.us/berliner_dan_2)

**Google Classroom:** [classroom.google.com](https://classroom.google.com)

**U of M Class Website:** <https://canvas.umn.edu>

**Prerequisites:** High school algebra, plane geometry, and trigonometry, or by instructor approval

## Land Acknowledgement

Roosevelt High School resides on the land where the water reflects the sky: Mni Sota Makoce (Minnesota). We are occupying the ancestral land of the Dakota, Anishinaabe, and Ho-Chunk peoples. This land was taken illegally by the United States government using treaties it did not honor.

## Course Overview

IB Physics SL Year 1 is the first of a two-year, algebra-based physics course. This is an advanced class designed for students who are particularly interested in physics and/or related subjects.

## College in the Schools

The first year of this class will be administered in coordination with the University of Minnesota via College in the Schools. In other words, the curriculum of this course will be identical to the University of Minnesota course described below. If you choose to participate in this opportunity, you will be officially enrolled at the University, and you will receive college credit for this course upon satisfactory completion.

## U of M Course Catalog Information

*Title and Department Code:* Introduction to College Physics I; PHYS 1101W (4 credits)

*Class and Section Number:* 27701 (704)

*Course Description:* Fundamental principles of physics in the context of everyday world. Use of kinematics/dynamics principles and quantitative/qualitative problem solving techniques to understand natural phenomena. Lecture, recitation, lab. Primarily for students interested in technical areas.

## Teacher Schedule

Period 1	Prep Hour
Period 2	CiS/IB Physics 1
Period 3	Prep Hour
Period 4	Astronomy
Period 5	Physics
Period 6	Physics
Period 7	Physics

The textbook will be checked out to you from the media center. Please don't buy your own!

If you have any concerns about getting other supplies, please let Mr. Berliner know.

## Materials

*Textbook:* Walker, J. S. (2010). *Physics* (4th ed). San Francisco, CA: Addison-Wesley.

*Other Supplies:*

- One dedicated notebook. You may instead use a 3-ring binder.
- One dedicated folder
- Pencil(s) and pen(s)

## Course Components

*Reading:* Parts of the textbook will be frequently assigned for reading. These reading assignments are not optional - the class lessons will be designed under the assumption that you have completed the reading.

*Homework:* Homework problems will be assigned on a regular basis. This is your chance to practice the physics that you learn from the readings and in class. It is important that these homework assignments be completed on time to keep up with the topics.

*Notes:* You will be expected to keep organized notes in your own notebook or binder. You can use these notes any time you need to refer to something we did in class, such as while completing homework or studying for quizzes or exams.

*Labs:* There will be several labs throughout the course, approximately three per quarter. Each lab will have pre-work that will be assigned to complete before the lab. After a set of labs, a detailed lab report will be assigned for you to write. These reports will give you opportunities to write detailed lab reports to practice your communication of scientific ideas. Each lab report may be rewritten based on instructor feedback. However, only the first lab report's rewrite will affect your college grade (see "Grading" below).

*Quizzes:* There will be several short quizzes throughout the course to check your grasp of the physics concepts.

*Exams:* There will be approximately one exam per quarter. These exams will assess your grasp of the physics concepts. They may be retaken for your high school grade, but only the original score will count toward your college grade (see "Grading" below).

*Final Exam:* The school year will end with a final exam that represents a summary of the content from the entire course.

## Grading

You will receive two different grades for this course: a high school grade and a college grade. This is because Roosevelt and the University of Minnesota have different grading policies. The college grade will be cumulative for the entire year, and will be based on labs, exams, and the final exam. The high school grade will be quarter-by-quarter, will include other items such as homework and quizzes, and will be graded using an 8-point rubric. There are also differing policies on things such as retakes. For example, there may be a circumstance where Roosevelt allows a retake but U of M does not. In that case, your retake would only affect your high school grade and not your college grade. The high school grade is what will appear on your Roosevelt transcript, and the college grade is what will appear on your University of Minnesota transcript.

Grade Percentages and Retakes

Item	RHS Grade %	U of M Grade %	RHS Retake?	U of M Retake?
Homework	5%	0%	N/A	N/A
Quizzes	15%	0%	Yes - unlimited	N/A
Labs*	40%	50%*	Yes - 1 each lab	First lab only
Exams	40%	50%	Yes - 1 each exam	No

\*Per University of Minnesota requirements, students must earn 60% or greater in the lab to pass the class.

Grading Scale (RHS 8-point Rubric)

Grade	%	Grade	%	Grade	%
		<b>A</b>	≥87	<b>A-</b>	≥75
<b>B+</b>	≥71	<b>B</b>	≥66	<b>B-</b>	≥63
<b>C+</b>	≥59	<b>C</b>	≥54	<b>C-</b>	≥50
<b>D+</b>	≥44	<b>D</b>	≥31	<b>D-</b>	≥25
		<b>F</b>	<25		

Grading Scale (U of M Standard Scale)

Grade	%	Grade	%	Grade	%
		<b>A</b>	≥90	<b>A-</b>	≥85
<b>B+</b>	≥80	<b>B</b>	≥75	<b>B-</b>	≥70
<b>C+</b>	≥65	<b>C</b>	≥60	<b>C-</b>	≥55
<b>D+</b>	≥50	<b>D</b>	≥45	<b>D-</b>	≥40
		<b>F</b>	<40		

### Tentative Schedule of Summative Assignments

*Note:* This schedule is extremely tentative, and is subject to change as the year progresses.

Date	Item	Date	Item
<b>10/19/2021 (Tue)</b>	Lab Report 1 Due	<b>2/17/2022 (Thu)</b>	Exam 3 - 2D Motion
<b>10/28/2021 (Thu)</b>	Exam 1 - 1D Motion	<b>3/4/2022 (Fri)</b>	Lab Report 4 Due
<b>11/23/2021 (Tue)</b>	Lab Report 2 Due	<b>4/29/2022 (Fri)</b>	Lab Report 5 Due
<b>12/16/2021 (Thu)</b>	Exam 2 - Forces	<b>5/19/2022 (Thu)</b>	Exam 4 - Energy and Momentum
<b>1/21/2022 (Fri)</b>	Lab Report 3 Due	<b>6/2/2022 (Thu)</b>	Final Exam

### School-Wide Policies (Roosevelt)

*Passes:* Students must ask the teacher for a pass to leave the class. If they student already has a pass (such as a clinic appointment or a counselor meeting), they should inform the teacher ahead of time so that the teacher is aware when the student is leaving for that meeting. Except in extenuating circumstances, passes will not be given during the first or last ten minutes of class.

Each teacher will individually keep a no-pass list for students who abuse the trust of passes. The guidelines for getting on and off the no-pass will be co-created with the class, and will subsequently be posted in the classroom.

*Electronics:* Cell phones and electronic devices must be out of sight in the classroom or instructional spaces during any scheduled classes, unless specifically being instructed to use it for an instructional activity. Students may be on phones during passing time and lunch. If a student is asked to put their phone away, they should do so immediately. Choosing not to do so will result in one of the following consequences.

- 1st and 2nd time: Hall staff is called to take the device, which will be given to the student's dean. **Student** can pick up the device from the dean at the end of the school day.
- 3rd time and beyond: Hall staff is called to take the device, which will be given to the student's dean. Student's **parent/guardian** will be called to come pick up the device at the end of the day.
- Walking out of the classroom before hall staff arrives will result in handing over the device at the beginning of the next school day. Refusal to hand over device may result in suspension.

*Academic Honesty:* Academic misconduct is defined as "purposeful or unintentional behavior that may result in a student gaining an unfair advantage." Students engaged in academic misconduct will be penalized on the assignment, may be given the opportunity to resubmit the assignment for credit, and they will be

reported to their dean for disciplinary action and administration if applicable. Academic misconduct includes, but is not limited to:

- cheating on assignments or tests
- plagiarizing (misrepresenting as one's own anything done by another)
- submitting the same or substantially similar papers or creative work for more than one course without consent of all instructors concerned
- depriving another of necessary course materials
- sabotaging another's work
- colluding to support malpractice by another student
- To avoid plagiarism, words and ideas used to support one's argument **MUST** be acknowledged in all journals, papers and presentations.

In our class, you are required to use MLA citation style. Passages that are quoted verbatim must be enclosed within quotation marks and the author must be acknowledged. Electronic media (websites, etc.) must be treated the same way as books and journals, and the sources of all photographs, maps, illustrations, etc. must also be acknowledged if not your own work.

- **1st time:** Item score is reduced to zero. Student may **retry** the item for **full credit** after a meeting with the teacher. Dean is informed, and will meet with the student.
- **2nd time:** Item score is reduced to zero. Student may **retry** the item for **half credit** after meeting with the teacher. **Referral** is written to dean, who will **call home** and meet with the student.
- **3rd time:** Item score is reduced to **zero permanently**. **Referral** is written to dean, who will **call home** and meet with the student.
- **4th time and beyond:** Item score is reduced to **zero permanently**. **Referral** is written to dean, who will **call home** and meet with the student. Notice of the offenses will be **submitted to post-secondary institutions**, and the student **may be automatically assigned an F** for the class.

## **Policies (University of Minnesota)**

### Student Conduct Code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected to adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: [https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy\\_student\\_conduct\\_code.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_student_conduct_code.pdf)

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach and/or a student's ability to learn." The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities.

### Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each instructor to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: <https://policy.umn.edu/education/studentresp>.

### Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy\\_student\\_conduct\\_code.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_student_conduct_code.pdf)) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <https://policy.umn.edu/education/instructorresp>.

The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-dishonesty>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class, e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

### Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: <https://policy.umn.edu/education/makeupwork>.

### Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <https://policy.umn.edu/education/studentresp>.

### University Grading Scales

The University has two distinct grading scales: A-F and S-N.

**A-F grading scale.** The A-F grading scale allows the following grades and corresponding GPA points:

<b>Grade</b>	<b>GPA Points</b>	<b>Definitions for undergraduate credit</b>
A	4.000	Represents achievement that significantly exceeds expectations in the course.
A-	3.667	
B+	3.333	
B	3.000	Represents achievement that is above the minimum expectations in the course.
B-	2.667	

C+	2.333	
C	2.000	Represents achievement that meets the minimum expectations in the course.
C-	1.667	
D+	1.333	
D	1.000	Represents achievement that partially meets the minimum expectations in the course. Credit is earned but it may not fulfill major or program requirements.
F	0.000	Represents failure in the course and no credit is earned.

**S-N grading scale.** The S-N grading scale may not be available to students registered through College in the Schools. Check with your instructor regarding grading options. If it is available, the S-N grading scale allows for the following grades and corresponding GPA points:

Grade	GPA Points	Definitions for undergraduate credit
S	0.00	Satisfactory (equivalent to a C- or better)
N	0.00	Not Satisfactory

For additional information, please refer to: <https://policy.umn.edu/education/gradingtranscripts>.

#### Sexual harassment, sexual assault, stalking and relationship violence

The University prohibits sexual misconduct, and encourages anyone experiencing sexual misconduct to access resources for personal support and reporting. If you want to speak confidentially with someone about an experience of sexual misconduct, please contact your campus resources including the Aurora Center, Boynton Mental Health or Student Counseling Services (<https://eoaa.umn.edu/report-misconduct>). If you want to report sexual misconduct, or have questions about the University's policies and procedures related to sexual misconduct, please contact your campus Title IX office or relevant policy contacts.

Instructors are required to share information they learn about possible sexual misconduct with the campus Title IX office that addresses these concerns. This allows a Title IX staff member to reach out to those who have experienced sexual misconduct to provide information about personal support resources and options for investigation. You may talk to instructors about concerns related to sexual misconduct, and they will provide support and keep the information you share private to the extent possible given their University role.

[https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy\\_sexual\\_harassment\\_sexual\\_assault\\_stalking\\_and\\_relationship\\_violence.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_sexual_harassment_sexual_assault_stalking_and_relationship_violence.pdf)

#### Equity, Diversity, Equal Opportunity, and Affirmative Action

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, membership or activity in a local commission created for the purpose of dealing with discrimination, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: [https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy\\_equity\\_diversity\\_equal\\_opportunity\\_and\\_affirmative\\_action.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_equity_diversity_equal_opportunity_and_affirmative_action.pdf).

#### Disability Accommodations

The University views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Twin Cities – 612-626-1333) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, can often work with instructors to minimize classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact your (access consultant/disability specialist).

**Additional information:** Twin Cities - <https://diversity.umn.edu/disability/>, drc@umn.edu)

### Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

### Academic Freedom and Responsibility: for courses that do not involve students in research

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.\*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

\* *Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*

<https://policy.umn.edu/education/syllabusrequirements-appa>

University policies updated July 1, 2021