

## Physics 350 – Modern Physics I – Spring 2021

---

**Instructor:** Dr. Andrew B. Croll  
Room 212b, South Engineering  
1211 Albrecht Blvd  
Fargo, ND 58108-6050  
[Andrew.croll@ndsu.edu](mailto:Andrew.croll@ndsu.edu)

**Office Hours:** Tuesday/Thursday 9:00 to 11:00 (zoom or my SE office)

---

**Aim:** To learn how the interaction of matter and energy govern the behavior of the universe around us.

**Description:** Breakdown of classical physics, Bohr model, Schrodinger mechanics of simple systems, atomic structure, selected topics from nuclear and solid state physics.

**Prerequisites:** MATH 266, PHY 252

**Class:** Tu/Th 11:00 - 12:15 - NDSU South Engineering 118

**Required Course Materials:** (available at NDSU Bookstore)

- (1) Morrison, Modern Physics for Scientists and Engineers.
- (2) Scientific calculator.

**Evaluation:**

1 midterm exam	25%
1 final exam	25%
10 assignments	25%
1 Group Project	10%
Quizzes	15%

**Grading:**

85%	-100%	A,
70%	- 85%	B,
60%	- 70%	C,
50%	- 60%	D,
0%	- 50%	F.

**Marking Scheme:**

three point marking system

0	– nothing of any value is written down
1	– something useful has been written down
2	– the main idea of how to solve the problem appears
3	– mostly a correct answer (1 minor mistake permitted)

**Make-up Policy:** There shall be no make-up allowed for missed assignments or quizzes. If the midterm is missed and a student provides written documentation of a legitimate reason the final exam will be made worth double.

**Classroom Expectations:** According to NDSU Policy 333 ([www.ndsu.edu/fileadmin/policy/333.pdf](http://www.ndsu.edu/fileadmin/policy/333.pdf)), **attendance in classes is expected**, but given the Covid19 pandemic this will be more flexible. The course is taught with loose Hyflex principles, so can be attended online synchronous, online asynchronous as well as in person. **Most evidence shows that in person attendance is most beneficial.** Recordings will be made available in blackboard after scheduled class times.

**NDSU requires students to wear face coverings in classrooms.** Wearing face coverings helps reduce the risk to others in case you are infected but do not have symptoms. You must properly wear a face covering (covering both the mouth and nose) for the entirety of the class.

If you fail to properly wear a face covering, you will not be admitted to the classroom. However, you may choose to participate in the class remotely. The following will be used as needed: referral to Dean of Students Office or administrative removal from class. Students who cannot wear a face covering due to a medical condition or disability may seek accommodation through Disability Services (701-231-8463; <https://www.ndsu.edu/disabilityservices/>).

Disinfecting supplies are provided for you to disinfect your learning space. You may also use your own disinfecting supplies.

Students should observe social distancing guidelines whenever possible. Students should avoid congregating around instructional space entrances before or after class. Students should exit the instructional space immediately after the end of class to ensure social distancing and allow for the persons attending the next scheduled class to enter the classroom.

In accordance with NDSU Policy 601, failure to comply with instructions, including this syllabus, may be handled according to the Code of Student Conduct resolution process and may result in disciplinary sanctions.

Food and drink **are not** permitted in class unless a student has a documented accommodation through Disability Services. Students will have to remove their masks to eat or drink.

**Attendance:** According to [NDSU Policy 333 \(http://www.ndsu.edu/fileadmin/policy/333.pdf\)](http://www.ndsu.edu/fileadmin/policy/333.pdf), attendance in classes is expected. Lecture attendance will not be directly factored into the final grade but active daily participation is essential. Students are expected to read the day's lesson prior to coming to class and to be prepared to discuss it in class. Material may be presented that is not in the text or it may be presented in a different way. Students are responsible for all material presented in class including that missed during excused absences. If you miss a class, it is your responsibility to view recorded classes and discuss with peers.

Attendance at exams is mandatory unless excused for a valid University approved reason. **Do not attend if you are ill.** Excused absences must be made-up and zero credit will be awarded for unexcused absences.

If you are going to miss an exam for a valid excuse, e-mail or telephone your instructor before the test or on the same day. Phone number and e-mail address are listed above.

**Assignments:** Homework problem sets on current course material will be assigned in class. There will be a problem set for each chapter, which are required to be submitted at the time indicated on each problem set. **No late homework will be accepted.** You may work together on homework sets, but do not simply copy another's answers; this will not benefit you when it comes to the exams or your future.

**Service Members:** Veterans and student service members with special circumstances or who are activated are encouraged to notify the instructor as soon as possible and are encouraged to provide Activation Orders.

**Special Needs:** Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact the [Disability Services Office \(http://www.ndsu.edu/disabilityservices/\)](http://www.ndsu.edu/disabilityservices/) as soon as possible.

**Academic Honesty:** The academic community is operated on the basis of honesty, integrity, and fair play. [NDSU Policy 335: Code of Academic Responsibility and Conduct](#) applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the [Office of Registration and Records](#). Informational resources about academic honesty for students and instructional staff members can be found at [www.ndsu.edu/academichonesty](http://www.ndsu.edu/academichonesty).

**HyFlex Options:** See <https://kb.ndsu.edu/learn> for web resources for students on HyFlex compiled by IT. If you are at high risk of contracting COVID-19 (and/or of infecting someone who is high risk), you have the option of attending class remotely. You may opt to do so at the beginning of the semester or as the need arises during the semester.

To participate in HyFlex instruction remotely, you must have access to the requisite technology, including a laptop/computer with a functioning microphone, speakers (or headphones) and webcam, as well as reliable internet access.

To opt for the remote learning experience in this course inform the course instructor via email as soon as possible.

**Additional Resources for Students:** As a member of the NDSU community, resources are available for you should you need help in dealing with adverse reactions to things happening in the world today. A variety of resources are listed below:

For students on campus and remotely (telehealth):

- Counseling Services: 701-231-7671; <https://www.ndsu.edu/counseling/>
- Disability Services: 701-231-8463; <https://www.ndsu.edu/disabilityservices/>
- Student Health Service: 701-231-7331; <https://www.ndsu.edu/studenthealthservice/>
- Dean of Students Office: 701-231-7701; <https://www.ndsu.edu/deanofstudents/>

In a crisis or emergency situation:

- Call University Police: 701-231-8998
- Call 9-1-1
- Go to a Hospital Emergency Room
- Go to Prairie St. Johns for a Needs Assessment: 701-476-7216 (510 4th St. S.)
- Call the FirstLink Help Line: 1-800-273- TALK (8255) or 2-1-1
- Call Rape and Abuse Crisis Center: 701-293-7273

**Tentative Schedule:**

11 – Jan.	31 – Mar.	(A7 due)
13 – Jan.	5 – Apr.	
18 – Jan. (A1 due)	7 – Apr.	
20 – Jan.	12 – Apr.	(A9 due)
25 – Jan.	14 – Apr.	
27 – Jan. (A2 due)	19 – Apr.	
1 – Feb.	21 – Apr.	(A10 due)
3 – Feb.	26 – Apr.	
8 – Feb. (A3 due)	28 – Apr.	
10 – Feb.	3 – May	Dead Week
15 – Feb.	5 – May	Dead Week (A11 due)
17 – Feb. (A4 due)		
22 – Feb. (Adhesion Society Meeting)		
24 – Feb. (Adhesion Society Meeting)		
1 – Mar.	10 – May	Tuesday 8:00 am! Final Exam!
3 – Mar. (A5 due)		
8 – Mar. Midterm		
10 – Mar.		
15 – Mar. March Break (APS March Meeting)		
17 – Mar. March Break (APS March Meeting)		
22 – Mar. (A6 due)		
24 – Mar.		
29 – Mar.		