



General Physics II

Course Number: PHYS 2015

Section(s): 031

Term: Spring 2022

Class Session: 001 Regular Academic Session

Class Meeting Details

Delivery mode: In person

Class meeting days and times: TuTh 12:00 PM - 01:50 PM

Location: M W Alworth Hall 347

Instructor Information

Brian Kohn

Preferred Pronouns: Mr

Office Location: 227 Engr

Email Address: bkohn@umn.edu

Office Phone: 218/726-6456

Office Hours: 12:00 - 3:00 M W F

Office Hours Meeting Location: 237 Engr

Dheeraj Sapkota

Email Address: sapko024@umn.edu

Required Course Materials

Physics for Scientists and Engineers

ISBN: ISBN: 9781305955974

Authors: Debora M. Katz

Publisher: Cengage Learning

Publication Date: 2017

Course Details

Catalog description: Calculus-based introduction to electricity, magnetism and optics. The companion laboratory, PHYS 2016, should be taken concurrently. prereq: previous or concurrent registration in 2016. Prerequisite of 2011 or 2013 and 2014, Math 1297 or 1597; credit will not be granted if already received for PHYS 1202, 1204 or 2012.

Course Student Learning Outcomes

- See daily lecture notes published by the UMD bookstore for learning outcomes associated with each lecture.

Assessment Measure(s): 5 midterm exams and a final exam

Graded Course Components

Grades will be posted on Canvas throughout the semester. Please check your scores as they are posted. The final course grade will be weighted as follows:

Exams (8) including Final 80%

Problem Sets 10%

Discussion 10%

Graded Course Components - Points

Due Dates	Items	Points

Brief List of Topics to be Covered

This course gives a general theoretical and practical introduction to Physics appropriate for engineering, science, and math majors. It is a Calculus-based course and covers the following topics: electric fields and potential, capacitors and DC circuits, magnetism and inductance, AC circuits, electromagnetic waves, and optical phenomena to include reflection, refraction, dispersion, polarization, geometric optics, interference, and diffraction.

Program Learning Outcome Alignment - Undergraduate

This course aligns with the following program learning outcome(s):

- This course also addresses ABET Criterion 3, student outcome (1) - an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

Class Schedule

Weeks 1 - 3

Electric Forces Chap 23

Electric Fields Chap 24

Gauss's Law Chap 25

Electric Potential Chap 26

Weeks 4 - 7

Capacitance and Batteries Chap 27

Current and Resistance Chap 28

Direct-Current (DC) Circuits Chap 29

Weeks 8 - 11

Magnetic Field and Magnetic Forces Chap 30

Gauss's Law for Magnetism and Ampere's Law Chap 31

Faraday's Law Chap 32

Induction and AC Circuits Chap 33

Weeks 12 - 15

Electromagnetic Waves Chap 34

Diffraction and Interference Chap 35

Refraction Chap 38

Class Policies

Homework: Problem sets will be scanned and submitted to Canvas on the day of the exam. Late assignments will be penalized and make up exams will be allowed only for verifiable emergencies. All assignments must be use the format discussed in class. You will lose points for improper format and/or lack of neatness.

Discussion Sessions. Attendance is required and points given for participation. One absence is allowed. Subsequence absences will result in a zero for that session.

Resources for Students with Disabilities

It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements such as time limited exams, inaccessible web content, or the use of non-captioned videos, please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Call 218-726-6130 or visit the [Disability Resources](#) website for more information.

Mental Health and Stress Management Resources

Feelings such as anxiety, anger, depression, low self-esteem, or tension are a normal part of being human and can affect anyone. Sometimes these feelings are temporary and can be eased by rest, relaxation, exercise, good nutrition and the support of trusted friends. At other times, stressors, relationships or past family experiences cannot be managed so easily and become overwhelming. If this happens, and you find it hard to function, you may want to seek professional help. Counseling Services are available at UMD Health Services to assist you. If you are in need of mental health support when Health Services is closed, or in case of an emergency, please contact The Birch Tree

Center's Crisis line at 218-623-1800 or go to the emergency room/urgent care at either St. Luke's Hospital or St. Mary's Hospital. If an ambulance is needed, call 911. If the emergency is non-life-threatening and you do not have a means of transportation, call Campus Police at 218-726-7000. If you have needs that Counseling Services does not treat, they have a case manager who helps connect students to referrals as well as navigating issues with insurance. You can learn more about the broad range of confidential mental health services available on campus at [UMD Health Services](#).

University Policies

[Student Conduct Code](#)

Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Students are expected to adhere to the Board of Regents Policy.

[Student Academic Integrity](#)

Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community.

[Appropriate Use of Class Notes & 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.

[Excused Absences](#)

Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. These are subpoenas, jury duty, military duty, religious observances, illness, bereavement, and NCAA varsity intercollegiate athletics.

[Final Examinations](#)

All 1xxx-5xxx courses offered for undergraduate credit should include a final graded component or end of term evaluation that assesses the level of student achievement of one or more course objectives. All final graded components are to be administered or due at the time and place according to the final exam schedule and not during the last week of class.

[Teaching & Learning: Instructor & Student Responsibilities](#)

UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have mutual responsibility to ensure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas.

[Sexual Harassment, Sexual Assault, Stalking and Relationship Violence](#)

Sexual harassment means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. See also: [Board of Regents Policy](#).

[Equity, Diversity, Equal Employment 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, veteran status, sexual orientation, gender identity, or gender expression. [Equal Opportunity and Affirmative Action](#) and the [Office of Student Conduct & Conflict Resolution](#) are both available to all UMD employees, students, and participants in University-related activities [to discuss issues or concerns](#) regarding University policies or practices involving potential bias, discrimination, harassment or retaliation that an individual may have experienced or observed.

[Academic Freedom and Responsibility](#)

Thoughtful dialog is a cornerstone of higher education. This expectation is upheld in the University of Minnesota's Board of Regents Policy: Academic Freedom and Responsibility, which says in part:

SECTION II. ACADEMIC FREEDOM.

Academic freedom is the freedom, without institutional discipline or restraint, to discuss all relevant matters in the classroom, to explore all avenues of scholarship, research, and creative

expression, and to speak or write on matters of public concern as well as on matters related to professional duties and the functioning of the University.

[Grading & Transcripts](#)

Mask Requirement

As of August 3, 2021 the University of Minnesota requires all students, staff, and faculty to wear masks when indoors regardless of vaccination status. Visit the the [UMD Safe Campus webpage](#) for up-to-date COVID information.

UPDATE: Effective March 21, 2022, masks are still required in all classroom and instructional laboratory settings. Please visit the [University's Face Mask Protocol webpage](#) for more details on indoor mask requirements in University-owned facilities.