

Syllabus PHYS 270 "General Physics: Electrodynamics, Light, Relativity and Modern Physics" Spring 2018

Web page of the course on ELMS/Canvas

Login site: <http://elms.umd.edu/>

Instructions: - Log in using your UMD Directory ID. If you are registered for the course, you will see the course Web space after login.
- Course announcements and Timeline of lectures and homework will be updated on ELMS, so you should check it regularly.

External link: <https://myelms.umd.edu/courses/1240629/>

Course Information

Course title: **General Physics: Electrodynamics, Light, Relativity and Modern Physics**

Course number: **PHYS 270**, 3 credits

Course description: Third semester of a three-semester calculus-based general physics course. Electrodynamics, Maxwell's equations and electromagnetic waves, geometrical optics, interference, diffraction, special theory of relativity, and modern physics. PHYS270 and PHYS271 (lab) must be taken in the same semester.

Course dates: Wednesday, January 24, 2018 through Thursday, May 10, 2018

Location: Room 1412, Toll Physics Building (PHY)

Lectures: Monday, Wednesday, Friday 1 - 1:50 pm

Prerequisite(s): PHYS261, MATH241, and PHYS260

Corequisite: PHYS271

Instructor

Name: Victor M. Yakovenko, Professor of Physics

E-mail: yakovenk (at) physics (dot) umd (dot) edu

Office location: Room 2115 at Toll Physics Building (PHY)

Office hours: Monday, Wednesday, Friday 2-3 pm and by appointment. Please e-mail in advance for an appointment even for the office hours or catch me immediately after lecture.

Office phone: 301-405-6151

Web page: <http://physics.umd.edu/~yakovenk>

Teaching Assistant

Sections: 0101 0102 0103 0106

Name: Evan Dowling

E-mail: edowling (at) terpmail (dot) umd (dot) edu

Office location: Room 3103B Toll Physics Building (PHY)

Office hours: By appointment

Teaching Assistant

Section: 0104
Name: Sohitri Ghosh
E-mail: sohitri (at) terpmail (dot) umd (dot) edu
Office location: Room 3101 Toll Physics Building (PHY)
Office hours: By appointment

Textbooks

Required Young and Freedman "University Physics"
14th edition, Pearson, 2016, ISBN-13: 978-0-321-97361-0

Goals, Homework, Exams, and Grades

Course Scope: Ch. 27 Magnetic Field and Magnetic Forces
Ch. 28 Sources of Magnetic Field
Ch. 29 Electromagnetic Induction
Ch. 30 Inductance
Ch. 31 Alternating Current
Ch. 32 Electromagnetic Waves
Ch. 33 The Nature and Propagation of Light
Ch. 34 Geometric Optics
Ch. 35 Interference
Ch. 36 Diffraction
Ch. 37 Relativity
Ch. 38 Photons: Light Waves Behaving as Particles
Ch. 39 Particles Behaving as Waves
Ch. 40 Quantum Mechanics in 1D: Wave Functions

Timeline: Timeline of the course is posted on ELMS and will be updated progressively in the evening after each lecture, so you can see what material was covered if you missed a lecture. The dates of midterm exams on Timeline are tentative and may be shifted. The timing of the common final exam is definitive. Please check for possible scheduling conflicts, especially for ADS students.

Exams: There will be three midterm exams and the [common final exam](#) on Tuesday, May 15, 6:30-8:30 pm. The exact dates and the format of midterm exams will be announced in advance closer to the dates. The format of the common final exam will be decided together with other instructors of this course. A formula sheet will be permitted at the final exam.

Homework: Solving homework problems is essential for learning and for preparation to exams. Online homework will be assigned weekly using [Expert TA](#) and will be due in one week. Expert TA is now integrated with ELMS. Clicking on the first homework in ELMS will take you to the registration page on Expert TA. After paying the registration fee of \$32.50 per semester by credit card, you will see the actual homework. Your name and username (e-mail address) in Expert TA will be the same as in ELMS, and your homework scores will be visible both in Expert TA and ELMS. Late homework can be submitted after due date with some penalty,

but **not after the final exam.**

Grades: The final grade will be based on your scores in homework (40%), midterm exams (30%), and the common final exam (30%). Your score within each category will be divided by the maximal possible score and added toward the overall score with the weights specified above. The overall score will be covered into letter grades with + and - levels using a grading schema to be specified after the final exam.

Resources for Struggling Students: [Academic Support](#) from Physics Department.

Society of Physics Students provides free tutoring in physics and math on Monday-Thursday from 4 to 6 pm in room PHY 1304 from upper-level physics majors, see sps.physics.umd.edu/resources/tutoring e-mail: umd (dot) sps (at) gmail (dot) com

Free tutoring is provided by volunteers in [Slawsky Clinic](#), room PHY 1214, M-F 10 am to 3 pm, 301-405-5984.

[Learning Assistance Service](#) from the University Counseling Center.

Students with Disabilities: Please give me your ADS letter ASAP on paper or by e-mail (preferred). Even if you give it to me on paper, please also send an **e-mail to facilitate communication**. It may not be possible to accommodate ADS requests brought up shortly before exams.

Course Related Policies

General: [Course Related Policies](#)

Student Honor Council: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://shc.umd.edu/>.

Last updated January 25, 2018