



**SAINT LOUIS UNIVERSITY**  
**MADRID**

**PHYS 1330 M01: Physics II**  
Spring 2018

**Class Days and Time:** TR, 11:00-12:15

**Classroom:** PRH-14

**Prerequisite(s):** PHYS-1310. Must enroll also in a PYHS-1340 lab section.

**Credit(s):** 3

**Instructor:** Francisco Prieto

**Instructor's Email:** francisco.prieto@slu.edu

**Instructor's Campus Phone:** 91 554 58 58, ext. 250

**Office:** PAH-203

**Office Hours:** W, 10:00-12:00

**Course Description:**

Study of electrostatics, electric field and Coulomb's law; electric current, resistance and Kirchhoff's laws; magnetism, induced electromotive force; alternating currents; optics.

**Course Goals and Student Learning Outcomes:**

To provide a clear and logical presentation of the basic concepts and principles of physics, and to allow the student to develop his analytical and problem solving skills. The course is appropriate for students majoring in biology, the health professions, and other disciplines, including environmental, earth and social sciences, and economics. The mathematical techniques used in this course include algebra, geometry, and trigonometry, but no calculus.

At the end of the course, students will:

**Physics Program Objectives**

- A. Students will understand the principles of physics and apply these principles to problems of fundamental and practical interest.
- B. Students will design and conduct experiments and analyze and interpret data.
- C. Students will collaborate effectively on teams.
- D. Students will communicate effectively and professionally in oral and written formats.
- E. Students know about contemporary issues in science and technology.
- F. Students will understand the numerical formulation of scientific problems and be able to solve such problems utilizing at least one programming language or environment.

**Student Learning Outcomes**

<b>Program Objectives</b>	<b>Student Learning Outcomes</b>	<b>Assessment Method</b>
<b>A</b>	A.1. Apply Coulomb's law and Gauss' law to calculate the electric field of a charge distribution. A.2. Calculate the effect of the electric field on a charge distribution. A.3. Calculate the electric potential of a charge distribution.	Mid-term and Final Exam - Conceptual questions - Problems

	A.4. Relate the equipotential surfaces to the electric field lines of a charge distribution. A.5. Calculate the capacitance of a capacitor or combination of capacitors. A.6. Apply Kirchhoff's laws to simple electric circuits consisting of resistors, capacitors and DC sources. A.7. Calculate the magnetic force due to a magnetic field on a moving charge and on a current. A.8. Apply Ampere's law to calculate the magnetic field generated by a current. A.9. Apply Faraday's law. A.10. Explain Maxwell's equations and the basic features of electromagnetic waves. A.11. Solve problems in geometrical optics. A.12. Represent graphically a physical system using the free-body diagram technique. A.13. Identify the essential aspects of a problem, connect it to related areas of physics, formulate a strategy for solving the problem, apply appropriate techniques to arrive at a solution, test the correctness of the solution, and interpret the result. A.14. Show strong mathematical skills.	CSEM Test
<b>B</b>	B.1. Analyze and interpret physics data represented graphically.	Mid-term and Final Exam - Conceptual questions CSEM Test
<b>D</b>	E.1. Communicate clearly and effectively the solution of a problem	Mid-term and Final Exam - Problems

Saint Louis University - Madrid Campus is committed to excellent and innovative educational practices. In order to maintain quality academic offerings and to conform to relevant accreditation requirements, the Campus regularly assesses its teaching, services, and programs for evidence of student learning outcomes achievement. For this purpose anonymized representative examples of student work from all courses and programs is kept on file, such as assignments, papers, exams, portfolios, and results from student surveys, focus groups, and reflective exercises. *Thus, copies of student work for this course, including written assignments, in-class exercises, and exams may be kept on file for institutional research, assessment and accreditation purposes.* If students prefer that Saint Louis University - Madrid Campus does not keep their work on file, they need to communicate their decision in writing to the professor.

#### Required Texts and Materials:

Knight, Jones, Field, *College Physics: a strategic approach*, 3<sup>rd</sup> Ed., Pearson, 2017

#### Other References:

Serway, Faughn, *Physics*, 9<sup>th</sup> Ed., Thomson Brooks/Cole

H. Young, *College Physics*, 9<sup>th</sup> Ed., Pearson, 2012

#### Attendance Policy:

- **It is mandatory to attend all classes unless a reasonable excuse is given.** Any unexcused absences in excess of 3 will result in a lowered grade and even in automatic failure in the course.
- **Make up exams are not given.** Students who legitimately miss an exam, due to a doctor's visit or family emergency must provide written documentation of the circumstances. A letter from the university counselor is accepted. Exams that are missed illegitimately result in a score of F. Grades for these students will be based on the remaining exams. Missing more than one exam results in an F grade.
- Useful information of the course can be found in Blackboard: <https://myslu.slu.edu>

## **Course Requirements and Grading Rationale/System:**

**Grading system:** The grade will be obtained from the following areas:

Homework/Participation: **10 %**

Quizzes: **10 %**

First Mid-term Exam: **25 %**

Second Mid-term Exam: **25 %**

Final Exam: **30 %**

### **Grading Scales:**

93% < A < 100%,

90% < A- < 93%

87% < B+ < 90%

83% < B < 87%

80% < B- < 83%

77% < C+ < 80%

73% < C < 77%

70% < C- < 73%

60% < D < 70%

F < 60%

**E-mail:** Campus and course announcements will often be handled by e-mail. Students should check their “@slu.edu” e-mail regularly.

**University Statement on Academic Integrity:** Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The governing University-level Academic Integrity Policy can be accessed on the Provost's Office [website](#). Additionally, SLU-Madrid has posted its academic integrity policy online: <http://www.slu.edu/madrid/academics>. As a member of the University community, you are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions and appeals.

The professor will review these matters during the first weeks of the term. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program, or the Academic Dean of the Madrid Campus.

**University Title IX Statement:** Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX deputy coordinator, Marta Maruri, whose office is located on the ground floor of Padre Rubio Hall, Avenida del Valle, 28 (mmaruri@slu.edu; 915-54-5858, ext. 213) and share the basic fact of your experience with her. The Title IX deputy coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the SLU-Madrid's Counseling Services on the third floor of San Ignacio Hall (counselingcenter-madrid@slu.edu; 915-54-5858, ext. 230) or Sinews Multiplettherapy Institute, the off-campus provider of counseling services for SLU-Madrid (www.sinews.es; 917-00-

1979). To view SLU-Madrid's sexual misconduct policy and for resources, please visit the following web address: <http://www.slu.edu/Documents/Madrid/campus-life/SLUMadridSexualMisconductPolicy.pdf>.

**Students with Special Needs:** In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor.
- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Academic Dean's Office (San Ignacio Hall) or by going to <https://www.slu.edu/madrid/academics/student-resources>.

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services at [disabilityservices-madrid@slu.edu](mailto:disabilityservices-madrid@slu.edu) or +915 54 58 58, ext. 230 for an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services. For more information about academic accommodations, see "Student Resources" on the SLU-Madrid webpage.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.

**Spring 2018 Course Schedule:**

Class date	Topic
Jan. 11	Presentation
Jan. 16	Electric charge- Coulomb's law
Jan. 18	The electric field
Jan. 21	Last Day to Drop a Class without a Grade W and/or Add a Class; Last Day to Choose Audit (AU) or Pass/No Pass (P/NP) Options
Jan. 23	Gauss' law
Jan. 25	<i>Problems</i>
Jan. 30	Electric potential
Feb. 1	<i>Problems</i>
Feb. 6	Capacitance
Feb. 8	Capacitance
Feb. 13	<i>Problems</i>
Feb. 14	Registration for Summer 2018 Begins
Feb. 15	<i>Review</i>
Feb. 20	<b>First Mid Term Exam</b>
Feb. 22	<b>Holiday</b>
Feb. 27	Electric current
Feb. 27	Professors' Deadline to Submit Midterm Grades
March 1	DC Circuits
March 6	DC Circuits
March 8	<i>Problems</i>
March 9	Last Day to Drop a Class and Receive a Grade of W
March 13	Magnetism
March 15	Magnetism
March 15	Last Day to Submit Transfer Application for Fall Semester
March 20	<i>Problems</i>
March 22	<i>Review</i>
March 27	<b>Holiday</b>
March 29	<b>Holiday</b>
April 3	<b>Second Mid Term Exam</b>
April 4	Registration for Fall 2018 Semester Begins
April 5	Induced voltages
April 10	Induced voltages
April 12	<i>Problems</i>
April 17	AC circuits
April 19	Maxwell's equations. Optics
April 24	Optics
April 26	<i>Problems</i>
May 1	<b>Holiday</b>
May 3	CSEM Test
May 4	<b>Final Exam (12:00 – 15:00)</b>

May 11	University Housing Move-out Date
May 12	Commencement
May 13	Professors' deadline to submit spring 2018 final grades

**Final Exam Schedules Spring 2018**

	<b>4 May (Fr)</b>	<b>7 May (Mn)</b>	<b>8 May (Tu)</b>	<b>9 May (Wd)</b>	<b>10 May (Th)</b>
<b>08:30-11:30</b>	Mn classes that meet at 9:00 & 9:30	Mn classes that meet at 10:00	Mn classes that meet at 11:00 & 11:30	Tu classes that meet at 9:30	Tu classes that meet at 8:00
<b>12:00-15:00</b>	Tu classes that meet at 11:00	Mn classes that meet at 13:00	Tu classes that meet at 14:30	Mn classes that meet at 12:00 & 12:30	Tu classes that meet at 12:30
<b>15:30-18:30</b>	Mn classes that meet at 14:30	Tu classes that meet at 17:00 & 17:30	Mn classes that meet at 16:00	Tu classes that meet at 16:00	Mn classes that meet at 17:30
<b>19:00-22:00</b>	---	---	Mn classes that meet at 18:30 & 19:00	Tu classes that meet at 19:00	---