



PHYS 512 – Classical Electromagnetic Theory

COURSE SYLLABUS: Spring 20246

Classes on Tuesday & Thursday, 9:30a -10:45a, room 146, STC

Instructor information

Instructor: Dr. Carlos Bertulani, <http://faculty.tamuc.edu/cbertulani/>

Office Hours: Tuesday & Thursday, 11:00 am 2:00 pm, room 140

University Email Address: carlos.bertulani@etamu.edu

Preferred Form of Communication: office hours & email

Catalog Description: PHYS 512. Classical Electromagnetism - 3 semester hours
A course designed to introduce students to classical electrodynamics: electrostatics, magneto-statics, multiple expansions, solution of boundary value problems, slowly varying currents, electromagnetic energy and momentum, Maxwell's equations and applications.

Textbook

Classical Electrodynamics, J.D. Jackson, John Wiley & Sons, New York, **ISBN:**
9780471309321

Software Required: None. But students must have access to a computer with internet connection.

Course Description

This is a University Science course. The interdisciplinary application of scientific principles is emphasized. The scientific principles developed in this course primarily include physics, and engineering, and other topics typically covered in the physical sciences. Connections and applications of these principles to the other sciences are examined. Science is an interesting and diverse topic; it is the instructor's intent to demonstrate that learning can be enjoyable as well as educational. Science is what allows mankind to function in a productive manner.

Course Outline

We will cover fully or partially the first 6 chapters of the book.

1. *Introduction to electrostatics.*
2. *Boundary-value problems in electrostatics I.*
3. *Boundary-value problems in electrostatics II.*
4. *Multipoles, electrostatics of macroscopic media, dielectrics.*

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5. *Magnetostatics, Faraday's law, quasi-static fields.*

6. *Maxwell's equations, macroscopic electromagnetism, conservation laws*

Student Learning Outcomes

- Students will understand the discipline-specific knowledge covering the subjects listed above.
- Students will be able to show a working knowledge of a broad array of physical phenomena that are based upon fundamental concepts.
- Students will have strong physical reasoning and problem solving skills and apply these skills to the solution of theoretical and applied problems.
- This course will offer a curriculum emphasizing physical science to produce professionals capable of applying broad theoretical insight to solution of practical problems.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students will need computer access to complete various assignments. Throughout this course, students will be using tools and technology to complete assignments and virtual labs. **Important:** Being an online course there is an assumption that participating students have the basic computer skills needed to complete online assignments in myLeo online (D2L). In addition, a working (virus free) computer and a stable internet connection is required for this course and also assumed to be present. The student is responsible for completing all assignments on time and any problems with student owned computer equipment and/or internet connection will not be taken into consideration for missing or late assignments.

Instructional Methods

Students will study class materials through myLeo online (D2L) system. There will be reading materials, homework, and online lab simulations each week. Based on the understanding of the materials, a short quiz will be assigned every week.

To get started with the course, go to: <http://www.tamuc.edu/myleo.aspx>.

You will need your CWID and password to log in to the course. If you do not know your CWID or have forgotten your password, contact Technology Services at 903.468.6000 or helpdesk@tamu-commerce.edu.

Student Responsibilities or Tips for Success in the Course

The syllabus/schedule are subject to change.

Students must check an online course on myLeo online (D2L) every week. All assignments and tests will be posted on the D2L system.

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

Grading Procedure

Homework: Homework: 40%, Midterm exams: 20%, Comprehensive final exam: 30%

* The scales can be adjusted by the instructor. The final grading policy will be announced before the final exam.

TECHNOLOGY REQUIREMENTS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS

Browser

Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

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COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

General Classroom

Students are expected to be on time and present for all class meetings. If an emergency results in an absence, the student should contact the instructor as soon as possible informing the instructor of the emergency and inquiring about ways to make up the missed class. The instructor will make judgment on how to handle the situation.

Possible reasons for excused absence are listed in the “Student’s Guidebook” under class attendance policy. Attendance and tardy records will be maintained and both may result in deductions from your overall grade. Five unexcused absences will automatically result in a failing grade.

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University Specific Procedures Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

ETAMU Attendance

The syllabus/schedule are subject to change.

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).
<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

East Texas A&M University Supports Students' Mental Health

Counseling Center Services

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835

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Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web

url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all ETAMU campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Artificial Intelligence

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in

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which the AI plagiarized another text or misrepresented sources.
13.99.99.R0.03 Undergraduate Academic Dishonesty
13.99.99.R0.10 Graduate Student Academic Dishonesty

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