COURSE SYLLABUS

Physics 5303, Electromagnetic Theory, Spring 2008
Tuesday and Thursday 12:30-13:50, SC 10
Instructor: Professor Walter L. Borst

Office hours: M, W, F 10:30-11:00 p.m., SC 11, Tel. 742-3864, e-mail: Walter.Borst@ttu.edu

Textbooks
Jackson, John David, *Classical Electrodynamics*; 3rd ed., John Wiley, 1999.
Griffiths, David J., *Introduction to Electrodynamics*, 3rd ed., Prentice Hall, 1999.

Topics
Introduction to electrodynamics
Maxwell's equations – static fields:
Electrostatics
Magnetostatics
Maxwell's equations - time-varying fields: Faraday's Law
Energy, momentum, angular momentum in electromagnetic fields
Electromagnetic waves, Fresnel's equations,wave guides

Homework
Problems will be assigned regularly from the class notes and textbooks. Do the homework on your own. It would be unethical to obtain homework answers from teamwork or sources such as the Internet. The homework is due at the beginning of class on the date specified. The homework may include some experimental projects. **Late homework will not be accepted.**

Term paper
A term paper is part of the course, accompanied by an oral presentation. Find a topic that matches the course content. Consult early about this with the instructor and submit the title and abstract of your paper on the due date (see calendar). Submit an outline of the paper by the deadline (calendar). The paper should follow the **APS style guide**, including a title, introduction, results and discussion, conclusion, figures, tables, and bibliography. The finished paper is to be sent to the instructor and students by e-mail as a PDF file attachment, **two days before the presentation at the latest**. After receipt of the PDF file, each student should print out a copy of it and bring it to class for reference. To the presenter of the paper: Speak freely, but show the highlights of your paper on overhead transparencies or computer projector.

The examinations are closed books. They cover the lecture notes, homework, and textbooks to the extent discussed in class. Bring a simple calculator (without physics content).
Taking *good lecture notes* is essential for studying and for the examinations.

No make-up examinations will be given. In a serious emergency, please contact the instructor to find out how the missed grade will be determined.

Attendance required, except for excused absences given to the instructor by e-mail. Each unexcused absence counts as -1% off the course total.

Grades
Two examinations 15% each, final examination 20%, homework 30%, term paper 20%.

100-A-85-B-70-C-55-D-40-F-0

CALENDAR for Physics 5303, Spring 2008 (Dr. Walter Borst)

M	T	W	Th	F	S
			1/10		
	1/15		1/17		
	1/22		1/24		
	1/29 **Term paper topic + abstract**		1/31		
	2/5		2/7		
	2/12 **Examination 1**		2/14		
	2/19		2/21		
	2/26		2/28		
	3/4		3/6		
	3/11 **Term paper outline due**		3/13		
	3/18 **Spring vacation**		3/20 **Spring vacation**		
	3/25 **Examination 2**		3/27		
	4/1		4/3		
	4/8		4/10		
	4/15		4/17 **Term paper presentations**		
	4/22 **Term paper presentations**		4/24 **Term paper presentations**		
	4/29 **Term paper presentations**		5/1 **Final examination** 1:30-4:00 p.m.		

Dates: See the attached **Calendar.**

Academic honesty: Academic dishonesty will not be tolerated and will be treated according to the rules outlined in the Student Handbook.

Course objectives and expected learning outcomes:
1. Know and apply the fundamentals of classical electrodynamics (Maxwell's equations).
2. Be able to apply these principles to other courses and even to everyday life.

Methods for assessing the expected learning outcomes:
1. Examinations and grades
2. In-class questions
3. Class discussions
4. Feedback from students after leaving TTU.

Disability: Any student who because of a disabling condition may require special arrangements in order to meet course requirements should contact the instructor as soon as possible so that the necessary accommodations can be made. The student must present appropriate verification from Access Tech. No requirement exists that accommodations be made prior to completion of the approved university procedure.