

2015 Spring 10320 PHYS532000 3 credits  
Electrodynamics (II) by Prof. Chang, Tsun-Hsu (張存續)

**Description:** This course covers Chaps. 8, 9, 10, 11, and 14 of Jackson's textbook. Each chapter contains practical materials which can be used in the on-going research. Lecture notes will be given, but the teacher will use blackboard. By doing so, the important ideas can be explained in details.

**Textbook:** J. D. Jackson, *Classical Electrodynamics*, Third Edition

**References:**

- D.J. Griffiths, *Introduction to Electrodynamics*, 3<sup>rd</sup>.
- R. P. Feynman, R. B. Leighton, and M. Sands, *The Feynman Lectures on Physics*.

**Time:** Tuesdays (10:10-12:00) & Thursdays (10:10-12:00)  
150 min will be used for lecture. Others may be used for Q&A, quiz, etc.

**Classroom:** To be determined

**Syllabus:** See the table shown in the next page.

**Homework:** Doing homework is the best way to master the concepts of Electrodynamics. Some of the homework problems might be appeared in the exam.

**Evaluation 1:** Midterm 50% and Final 50%    Open lecture notes.  
The final score will be normalized to reflect an average consistency with other courses.

✧ Electrodynamics is one of the most important courses for graduate students. After class, you had better spend at least 12 hours per week on this course.

## Schedule

Week	Date	Content
一	02/24 (二)	Introduction, evaluation etc. & Chap.8
	02/26 (四)	Chap. 8 <i>Waveguides, Resonant Cavities and Optical Fibers</i>
二	03/03 (二)	Chap. 8
	03/05 (四)	Chap. 8
三	03/10 (二)	Chap. 8
	03/12 (四)	Chap. 8
四	03/17 (二)	Chap. 8
	03/19 (四)	Chap. 8
五	03/24 (二)	Chap. 9 <i>Radiating Systems, Multipole Fields and Radiation</i>
	03/26 (四)	Chap. 9
六	03/31 (二)	Chap. 9
	04/02 (四)	Chap. 9
七	04/07 (二)	Chap. 9
	04/09 (四)	Chap. 10 <i>Scattering and Diffraction</i>
八	04/14 (二)	<b>Midterm Chs. 8 and 9</b>
	04/16 (四)	Chap. 10
九	04/21 (二)	Chap. 10
	04/23 (四)	Chap. 10
十	04/28 (二)	Chap. 10
	04/30 (四)	Chap. 10
十一	05/05 (二)	Chap. 11 <i>Special Theory of Relativity</i>
	05/07 (四)	Chap. 11
十二	05/12 (二)	Chap. 11
	05/14 (四)	Chap. 11
十三	05/19 (二)	Chap. 11
	05/21(四)	Chap. 11
十四	05/26 (二)	Chap. 14
	05/28 (四)	Chap. 14 <i>Radiation by Moving Charges</i>
十五	06/02 (二)	Chap. 14
	06/04 (四)	Chap. 14
十六	06/09 (二)	Chap. 14
	06/11 (四)	<b>Final Chs. 10, 11, and 14.1-14.3</b>
十七	06/16 (二)	Chap. 14
	06/18 (四)	Chap. 14
十八	06/23 (二)	Chap. 14
	06/25 (四)	Make-up (if necessary)

\* This table is for your reference only. The practical schedule will depend on the students' learning condition.