

## EE351

## Distributed Parameter Systems

Fall 2005

**Location:** Lectures: Sloan 46 MWF @ 11:10 a.m.,  
**Credits:** 3  
**Instructor:** Dr. Mohamed Osman  
Office: EME233  
Phone: 335-2301  
e-mail: [osman@eecs.wsu.edu](mailto:osman@eecs.wsu.edu), [ee351\\_EM2@yahoo.com](mailto:ee351_EM2@yahoo.com)  
Office hours : MW: 1:30 – 2:30, Tuesday: 9:00 – 10:00 or by appointment  
Web: <http://www.eecs.wsu.edu/~osman/EE351/>

### Teaching Assistant:

Name: Pinping Sun office hours: Tuesday: 3:30 – 5:00; Thursday: 3:10 – 4:10  
Office: EME 331 Phone: 335-1786 e-mail: [psun@eecs.wsu.edu](mailto:psun@eecs.wsu.edu)  
Help session:

### Text Book:

1. M. Iskander, “*Electromagnetic Fields and Waves*,” Waveland Press, 1992. (Required)

### Grading:

Homework	15%
Three midterm exams.	60%
Final [Mandatory & Comprehensive]	25%
Total	100%

**Exam. Policies:** The following restrictions will apply to all exams.

1. Closed notes and books.
2. No Crib sheets
3. No headphones, cell phones, or pagers
4. No hats
5. No guests or visitors during exams.
6. Make-up exams will be given only if *the instructor provides verbal approval before* the regular exam is administered. Leaving the instructor voice messages or sending e-mails do not constitute approval for make-up exam. It is very important that you make note of this policy.
7. Any discussion of the graded exams. will be done at a later time in my office provided you return your exam. Please do not place any additional notations or marks on the exam. To avoid such event, you will be asked to clear your desks when exams are returned. This procedure for returning the exams is considered an integral part of administering the exam. Consistent with other instructors, I reserve the right to reduce an exam score if it becomes apparent during your office visit that too much partial credit was given on the student’s exam.
8. Cheating in any form will result in automatic failure of the course and further actions by the School of EECS and WSU.

### Homework Policies:

“No late homework accepted”

Homework assignments are designed to prepare you for the exams and applying the concepts discussed in lectures. Turn in your own work for homework assignments. Do not copy your colleague’s homework solutions. The TA will be instructed to give students zero points for any problem that has been copied (regardless of “who did the work”). This policy is not meant to discourage studying together, but to ensure that the homework score provides a measure of the effort the student expends on the homework assignment.

Homework sets will be graded on a “points” system with increased number of points allotted to more challenging material (such as numerical methods.) While solving numerical methods homework problems, you must write computer programs in C, Fortran, or **Matlab**.

**Grade Cuts:**

The only grade cuts are that students receiving a course average less than 50% will probably receive an F for the course and those students receiving less than 60% will probably receive C- for the course. Course grades will be assigned by considering the histogram of course averages and looking for “natural” cuts where there is a clear difference between “groups” of students.

Reasonable accommodations are available for students who have a documented disability. Please notify instructor during the first week of class of any accommodations needed for the course. Late notifications may not guarantee the accommodations due to unavailability. All accommodations must be approved through the Disability Resource Center in Administration Annex room 205, 335-1566, e-mail: [drc@mail.wsu.edu](mailto:drc@mail.wsu.edu) in Pullman.

Week	Date	Lecture	Topic	Chapter	pages
1	8/22	1	Plane waves: Maxwell's Equations & Wave equation	2.12-2.13	150-154
	8/24	2	Plane waves in free space	2.14	154-160
	8/26	3	Plane waves: polarization	2.14- 2.15	161-168
2	8/29	4	Plane waves in conducting media	3.11	238-248
	8/31	5	Plane waves: Poynting vector and Power	3.12	248-260
	9/2	6	Plane waves : Normal Incidence	5.2-5.3	371-385
3	9/5		<b>No Classes (Labor day)</b>		
	9/7	7	Planes waves: normal incidence at Multiple interfaces	5	385-389
	9/9	8	Planes waves: normal incidence at Multiple interfaces	5	390-399
4	9/12	9	Total impedance procedure	5	390-399
	9/14	10	Quarter- and half-wavelength transformers	5	416-424
	9/16	11	Oblique Incidence	6	436-445
5	9/19	12	Perpendicular polarization	6	445-457
	9/21	13	Total reflection, Brewster angle	6	457-466
	9/23	14	Wavesguides	8	
6	9/26	15	Wavesguides	8	
	9/28	16	<b>Plane wave propagation</b>	<b>Exam 1</b>	
	9/30	17	Wavesguides	8	
7	10/3	18	Wavesguides	8	
	10/5	19	Wavesguides	8	
	10/7	20	Wavesguides	8	
8	10/10	21	Waveguides : Resonators	8	
	10/12	22	Waveguides	8	
	10/14	23	Waveguides	9	
9	10/17	24	Antennas	9	
	10/19	25	<b>Waveguides</b>	<b>Exam 2</b>	
	10/21	26	Antennas	9	
10	10/24	27	Antennas	9	
	10/26	28	Antennas	9	
	10/28	29	Antennas	9	
11	10/31	30	Antennas	9	
	11/2	31	Antennas	9	
	11/4	32	Antennas	9	
13	11/7	33	Antennas	9	
	11/9	34	Numerical Methods	4	
	11/11	35	<b>Veteran's Day</b>		
14	11/14	36	Numerical Methods	4	
	11/16	37	<b>Antennas</b>	<b>Exam 3</b>	
	11/18	38	Numerical Methods	4	
15	11/21				
	11/23		<b>No classes (Thanksgiving break)</b>		
	11/25				
16	11/28	39	Numerical Methods	4	
	11/30	40	Numerical Methods	4	
	12/2	41	Numerical Methods	4	
16	12/5	42	Numerical Methods	4	
	12/7	43	Review		
	12/9	44	Review		
17	12/14		<b>Final Exam (3:10 – 5:10 p.m)</b>		<b>ALL</b>

## Final Exam. Schedule for Fall 2005

**NO EARLY EXAMINATIONS. Final Examinations will not be rescheduled for the purpose of leaving the institution before the close of the semester (per academic rule 80).**

<b>Times</b>	<b>Days</b>				
	<b>Monday Dec. 12</b>	<b>Tuesday Dec. 13</b>	<b>Wednesday Dec. 14</b>	<b>Thursday Dec. 15</b>	<b>Friday Dec. 16</b>
<b>7:00–10:00 am</b> or <b>8:00–10:00 am</b>	9 Daily 9 M,W,F	2 Daily 2 M,W,F	Chem 101,102, 105,106 2 Tu, Th	10 Daily 10 M,W,F	4 Daily 4 M,W,F 3:50–5:00 M, W 4:15–5:30 M, W
<b>10:10 am– 12:10 am</b>	2:50–4:05 Tu,Th 3 Tu,Th	9:10–10:25 Tu,Th 9 Tu,Th	7:45–9 Tu,Th 8 Tu,Th	Math 172, 202	10 Tu,Th 11 Tu,Th 10:35–11:50 Tu–Th
<b>1:00–3:00 pm</b>	Math 201, 220	Acctg 230, 231 Fin 425 Evening lecture M,W,F*	12 Daily 12 M,W,F 12:00–1:15 M,W	B Law 210 Mktg 360	1:25–2:40 Tu,Th 1 Tu,Th
<b>3:10–5:10 pm</b> or <b>3:10–6:10 pm</b>	4:15–5:30 Tu,Th 4 Tu,Th	Math 100, 103, 107,171	11 Daily <b>11 M,W,F</b> 10:35–11:50 M,W	1 Daily 1 M,W,F 1:25–2:40 M,W	3 Daily 3 M,W,F 2:50–4:05 M,W
<b>7:00–9:00 pm</b> or <b>7:00–10:00 pm</b>	8 Daily 8 M,W,F 7:45–9 M,W	Span 101, 102, 203, 304	12:00–1:15 Tu,Th 12 Tu,Th	Biol 102, 106, 107	Cpt S 121 Evening lecture Tu,Th*

### NOTES:

- M,W,F evening lecture courses begin after 5pm; Tu,Th evening lecture courses begin after 5:30pm.
- Saturday, December 17,2005 is reserved for special examinations.