

E9 231: Digital Array Signal Processing

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Class held on: 05 Aug 2009

1 Topics

- Introduction to the course
- Syllabus and course schedule
- Classical antenna array communication versus MIMO communication

2 Announcements

1. Midterm: **Sept. 23, 2009**, in class.
2. Project presentations: last Friday of every month, 4-5:30pm, EC1.08.
3. Final exam: **Nov. 25, 2009**, 4-7pm.

3 Class Notes

- Course: **Digital Array Signal Processing**. Instructor: **Chandra R. Murthy**
- Venue and timings: **MW 4-5:30pm, Room EC1.08**
- Textbook: **Harry L. Van Trees, “*Optimum Array Processing*”, John Wiley & Sons, 2002**
- Syllabus: **Chapters 2, 3, 4, 6 and 7**
- Prerequisites: a good understanding of undergraduate level probability and statistics, linear algebra, Fourier transforms
- Class notes will be available online before each class.

3.1 Course Outline

The course outline can be found in Table 1.

Table 1: Class Schedule

S. No.	Topic	No. of lectures
0	Orientation meeting	1
1	Arrays and spatial filters	3
2	Linear arrays and apertures	5
3	Planar arrays and apertures	3
4	Optimum waveform estimation	9
5	Adaptive beamformers	6
	Total	26

4 Grading

- Homeworks: 15%
- Midterm: 25%
- Project: 20%
- Final: 40%