

## ASEN 5090 Fall 2013 Schedule

### Updated- August 24, 2013

MWF 10-10:50, ECCS 1B12

Readings & homework problems are from *Global Positioning System*, 2nd Edition, 2006, by Misra & Enge

*This is a tentative schedule based on what Professor Axelrad taught last year. Based on student feedback and background, I am sure that some of the lecture topics and homeworks will change. The exam schedule is set.*

Week	Monday	Wednesday	Friday	Assignments
1. 8/26	1. Introduction	2. <i>Longitude</i> Reading - Ch. 1	3. GPS Basics Reading - Ch. 2	HW 1 - Due 9/09
2. 9/02	Labor Day – no school	4. Signal Structure Reading - Ch. 2.3 & problems 2.1 & 2.2	5. Coordinate Frames (Ben Bradley) Reading - Ch. 4.1, 4.A	HW 2 - PRN Codes, Due 9/16
3. 9/09	6. Signals and Codes (continued) Ch. 2.3 & problems 2.1 & 2.2	7. Constellation & Control Segment Reading - Ch. 2.2, 4.4	8. User Basics Reading - Ch. 3	HW 3 – Visibility, Due 9/23
4. 9/16	9. Orbits Reading - Ch. 4.3	10. Homework discussion & GNSS Applications	11. Time & Clocks Reading - Ch. 4.2	
5. 9/23	12. Measurements & Errors Reading - Ch. 5	13. Ionosphere Reading - Ch. 5.3, 5.8	14. Troposphere Reading - Ch. 5 (mainly 5.3.3)	HW 4 - Handheld Lab, Due 10/7
6. 9/30	15. Multipath Reading – Ch.	16. GNSS Network Data Reading - Ch. 5.4.2, 10.7	17. Observable Combos Reading - 5.3, 5.7, 6.1	
7. 10/7	18. Error Project	19. Least Squares (General) Reading - Appendix 6.A	20. Midterm Exam Open Book, Open Notes Bring a calculator	HW 5 - Expected Range Due 10/21
8. 10/14	21. Least Squares continued.	22. GPS Point Positioning Reading - Ch. 5.8 and 6.1	23. Exam & homework discussion	HW 6 - Error Project Due 11/4
9. 10/21	24. DGPS & Carrier Phase Methods Reading - beginning of Ch. 7	25. Precise Point Positioning	Error Project Work day	29. C/A and Modernized Codes Reading - Ch 9
10. 10/28	26. Receiver Overview &	27. Receivers Continued	28. Link Budget	

	Antennas Reading - beginning of Ch. 11		Reading - Ch 10.1-10.4	
<b>11. 11/04</b>	29. Signals and Systems Reading - Ch. 8	30. Legacy GPS Signals	31. Modernized GPS Signals	HW 7 - Least Squares Solution Due 11/15
<b>12. 11/11</b>	Signals Lab (Under Development)			HW 8 - Modulation Lab Due 12/2
<b>13. 11/18</b>	32. Acquisition Reading - Ch 11.2-3	33. Acquisition Continued - Ch. 12	34. Code & Carrier Tracking Reading - Ch. 12	HW 9 - Final Least Squares Positioning Assignment Due 12/11
<b>14. 11/25</b>	FALL BREAK	FALL BREAK	FALL BREAK	
<b>15. 12/02</b>	35. Tracking Continued	36. GPS Radio Occultation Application	37. Spaceborne Applications of GPS	
<b>16. 12/11</b>	38. GPS/INS integration	39. Final Exam Review Q&A	40. TBD	

Final Exam, Sat., Dec 16, 4:30-7:00pm