

ASEN 5335 Aerospace Environment Course Syllabus Spring 2019

14 Jan 2020,

Instructor: Prof. Delores Knipp

Text: Understanding Space Weather and the Physics Behind It (USW)

DATE	TOPIC	READING	OTHER	ALT READING
Mtg 1	Introduction/Disturbances	→	<a href="https://iopscience.iop.org/book/978-0-7503-1372-8.pdf">https://iopscience.iop.org/book/978-0-7503-1372-8.pdf</a> (Hapgood)	
Mtg 2	Charged Particle Dynamics	USW 6.1-6.2	Review Ch 2	
Mtg 3	Sun-1 Structure& Emissions	USW Ch 3.1-3.3 5.1.1	<a href="http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-11-00179.1">http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-11-00179.1</a>	
Mtg 4	Sun-2 Magnetism& Eruptions	USW 9.1-9.2 & 10.1-10.2	<a href="http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-16-0191.1">http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-16-0191.1</a>	HW 1 Due
Mtg 5	Upper Atmos-1 Structure	USW 3.4.1 & 8.1		
Mtg 6	Upper Atmos-2 Ionosphere	USW 3.4.2 & 8.2		
Mtg 7	Upper Atmos-3 Disturbances	USW 8.1 & 12.2		
Mtg 8	Upper Atmos-4 Disturbances	USW 8.3 & 14.1-14.2		HW 2 Due
Mtg 9	Solar Wind-1 Quiet	USW 4.3.1 & 5.2		
Mtg 10	Solar Wind-2 Disturbed	USW 10.1-10.2	<a href="http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-16-0204.1">http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-16-0204.1</a>	
Mtg 11	Geomagnetism-1	USW 7.1		
Mtg 12	Geomagnetism-2	USW 7.2		HW 3 Due
Mtg 13	Rad Belt-1 Particle Dynamics	USW 6.1-6.2		
Mtg 14	Rad Belts- Particle Dynamics	USW 7.3		
Mtg 15	Magnetosphere-1 Structure	USW 4.3.1 & 4.4 & 7.4		
Mtg 16	Magnetosphere-Quiet	USW 11.1-11.2		Exam 1 Due
Mtg 17	Magnetosphere-Disturbed	USW 11.3		
Mtg 18	Rad Belts-3 Disturbances	USW 9.3 & 10.3		HW 4 Due
Mtg 19	Radiation Effects-Penetrating	USW 13.1.1-13.1.2		
	Spring Break			
Mtg 20	Radiation Effects-Penetrating	USW 13.1.3		HW 5 Due
Mtg 21	Radiation Effects-Charging	13.3 & Supplement		
Mtg 22	Debris	USW 13.2 & Supplement		Exam-2 Due
Mtg 23	Drag & Orbits-1	USW 13.1.4 & Supplement		
Mtg 24	Drag & Orbits-2	Supplement		Journal Review
Mtg 25	Iono-Thermo-1 Structure	USW 12.1 Review 11.3		
Mtg 26	Iono-Thermo-2 Quiet	USW 8.4 & 12.2		HW-6 Due
Mtg 27	Iono-Thermo-3 Disturbed	USW 13.3 & 14.3		
Mtg 28	Iono-Thermo-4 Disturbed	Supplemental Reading		
Mtg 29	Coupled Geospace Disturbance	Supplemental Reading		
Mtg 30	Review and Summary	Lloyds Report Sp Wx		HW-7 Due

Key: Upper Atmos—Upper Atmosphere, Rad Belts—Radiation Belts,  
Iono-Thermo—Ionosphere-Thermosphere