

ASEN 5335 Aerospace Environment Course Syllabus Spring 2018

12 Jan 2018, V 1.0

Instructor: Prof. Delores Knipp

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

DATE	TOPIC	READING	OTHER	ALT READING
Mtg 1	Introduction/Plasma/Particles	USW Ch 1 & Ch 6.1	Review Ch 2	
Mtg 2	Sun-1 Structure	Ch 3.1-3.3	<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>	VLP 5.1-.3, 5.6
Mtg 3	Sun-2 Active Emissions	USW 5.1.1 & 9.1	<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>	VLP 5.4-5.5
Mtg 4	Sun-3 Magnetism& Eruptions	USW 9.2 & 10.1-10.2	HW 1 Due	VLP 10.6
Mtg 5	Upper Atmos-1 Structure	USW 3.4.1 & 8.1		VLP 12.1-.7
Mtg 6	Upper Atmos-2 Ionosphere	USW 3.4.2 & 8.2		VLP 13.1-.4
Mtg 7	Upper Atmos-3 Disturbances	USW 8.1 & 12.2		VLP 13.5
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		VLP 9.3
Mtg 10	Solar Wind-2 Disturbed	USW 10.1-10.2		Prolss 6
Mtg 11	Geomagnetism-1	USW 7.1		
Mtg 12	Geomagnetism-2	USW 7.2	HW 3 Due	
Mtg 13	Guest Lecture on GOES-16		<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 14	Rad Belt-1 Particle Dynamics	USW 6.1-6.2	Exam 1 Due	VLP 10.1-.3
Mtg 15	Rad Belts- Particle Dynamics	USW 7.3		
Mtg 16	Magnetosphere-1 Structure	USW 4.3.1 & 4.4 & 7.4	HW-4 Due	VLP 9.1-.4
Mtg 17	Magnetosphere-Quiet	USW 11.1-11.2		VLP 10.1-.3
Mtg 18	Magnetosphere-Disturbed	USW 11.3		Prolss 5
Mtg 19	Rad Belts-3 Disturbances	USW 9.3 & 10.3		
Mtg 20	Radiation Effects-Penetrating	USW 13.1.1-13.1.2	HW-5 Due	VLP 11.1-.4
	Spring Break			
Mtg 21	Radiation Effects-Penetrating	USW 13.1.3		VLP 11.5-.6
Mtg 22	Radiation Effects-Charging	13.3 & Supplement		VLP 11.6-.7
Mtg 23	Debris	USW 13.2 & Supplement	Exam-2 Due	VLP 15.1-.4
Mtg 24	Drag & Orbits-1	USW 13.1.4 & Supplement		VLP 15.5-.8
Mtg 25	Drag & Orbits-2	Supplement		
Mtg 26	Iono-Thermo-1 Structure	USW 12.1 Review 11.3	HW-6 Due	Prolss 7
Mtg 27	Iono-Thermo-2 Quiet	USW 8.4 & 12.2	Journal Revu	Prolss 8
Mtg 28	Iono-Thermo-3 Disturbed	USW 13.3 & 14.3		
Mtg 29	Iono-Thermo-4 Disturbed	Supplemental Reading		
Mtg 30	Review and Summary	Lloyds Report Sp Wx	HW-7 Due	
2 <sup>nd</sup> week of May	Take Home Final	Due date is estimated	Final Exam Due	

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

VLP=Space Environment and Its Effects on Space Systems, Vincent Pisacane  
Prolss = Physics of the Earth's Space Environment: An Introduction, Gerd Prolss