

# GATEWAY TO SPACE

ASEN 1400 / ASTR 2500

T&R 9:30 to 10:45 AM – ITLL 1B50

Fall 2013

*Office Hours 10:45 – 11:45 after class or by appointment*

Class #	Date	Day	DTL	Topics	Assignments	Speakers
1	08-27-13	T	81	Class Introduction and Pictures (So starts the rollercoaster)	HW 01 Assigned HW 09 Assigned	Hanz Koehler & Chris Koehler
2	08-29-13	R	79	Guest Lecture – “Solar System Exploration Missions”	HW 02 Assigned	Jim Paradise (Lockheed Martin)
3	09-03-13	T	74	Spacecraft Overview – Part I		Chris Koehler
4	09-05-13	R	72	Spacecraft Overview – Part II	HW 01 DUE HW 03 Assigned (Q?s 1 - 2)	Chris Koehler
5	09-10-13	T	67	BalloonSat Overview & BalloonSat Hardware + Request for Proposals - <i>Functional Block Diagrams, Design Documents</i>	HW 02 DUE PROPOSAL Assigned (20 days)	Chris Koehler
6	09-12-13	R	65	Cancelled due to Campus Closure		
6	09-17-13	T	60	HANDS-ON: Team Forming + Team Activity	HW 03 Assigned (Q?s 3 - 10) HW 04 Assigned	All Teams
7	09-19-13	R	58	HANDS-ON: Soldering 101 (Build and Blink)	HW 05 Assigned	All Teams
8	09-24-13	T	53	HANDS-ON: Arduino – Part I (Type and Blink) > Multiple, Button, Fade, and Potentiometers	HW 03, HW 04 & HW 05 DUE HW 06 Assigned	All Teams
9	09-26-13	R	51	REVIEWS: Conceptual Design Review (CoDR)	Presentations DUE 7:00 AM Passwords today	All Teams
-	09-30-13	M	47	PROPOSALS DUE 8:00 AM		All Teams
10	10-01-13	T	46	HANDS-ON: Arduino – Part II (Sensors) > Temperature, Pressure, Accelerometers, and Shields	HW 06 DUE HW 07 Assigned	All Teams + JPL Intro
11	10-03-13	R	44	HANDS-ON: Arduino – Part III (Memory) > SD Cards & I2C	DD Rev A/B Assigned	All Teams
-	10-03-13 6 – 8 PM	R	44	HANDS-ON: Arduino – Part IV (Memory) > SD Cards & I2C		Team Representatives ITLL 1B50
-	10-04-13	F	43	>>> Authority To Proceed (ATP) by appointment with Chris <<<	9 AM – 3 PM + HW 07 DUE	Team Representatives
12	10-08-13	T	39	Requirements Flow Down Process + HASP 2013 Team	HW 08 Assigned	Caleb, Ashley, Jorge, Anthony, Kristen, Jon Chris Koehler
13	10-10-13	R	37	Rocket History		Chris Koehler
15	10-15-13 [WEB]	T	32	Guest Lecture – “Systems Engineering”	HW 08 DUE	Jessica Brown (Lockheed Martin)
16	10-17-13	R	30	REVIEWS: Preliminary Design Review (PDR)	PDR Pres. DUE 7:00 AM DD Rev A/B DUE 10/22 9 AM	All Teams
17	10-22-13	T	25	Launch Vehicles	DD Rev C Assigned	Chris Koehler
18	10-24-13	R	23	Orbits and Mission Design – Part I	MID-Semester Team Evaluations Assigned	Chris Koehler
19	10-29-13	T	18	Orbits and Mission Design – Part II	Mid Semester Team Evals DUE	Chris Koehler
20	10-31-13	R	16	Guest Lecture – “Spacecraft Propulsion”		Steve Hevert (Lockheed Martin)
21	11-05-13	T	11	DEMO - In-Class Mission Simulation Test (ON for the whole class) If Time = Spider		All Teams
22	11-07-13 [WEB]	T	32	Guest Lecture – “Spacecraft Structures”		Heather Reed (LASP)
23	11-12-13	T	04	REVIEWS: Launch Readiness Review (LRR)	LLR Presentations due 7:00 AM	All Teams
24	11-14-13	R	02	Launch Logistics	DD Rev C DUE 12 PM 11-16-12	Chris Koehler
25	11-15-13	F	01	Final BalloonSat Weigh-in and TURN IN <i>By appointment 8:00 AM to 1:00 PM</i>	Chris’s Office by 2:00 PM DLC 270A & LRR Cards DUE	All Teams
26	11-16-13 5 AM – 4 PM	SAT	00	Launch Day @ 6:50 AM @ Windsor, Colorado <i>(Leave Boulder at 4:45 AM!)</i>	Bad Weather Dates <i>(11/17, 12/07, or 12/08)</i>	
27	11-19-13	T	+3	Guest Lecture – “Spacecraft Attitude Determination and Control” + Launch Recap and Report and Data Analysis Guidance	Bring Your Raw Flight Data DD Rev D Assigned	Brady Young (Lockheed Martin)
28	11-21-13	R	+5	REVIEWS: Quick Look Post Launch Presentation	Presentations DUE 7:00 AM HW 09 DUE FRI @ 4:00 PM	All Teams
	11-26-13 11-28-13	T-R	+10	Fall Break – NO CLASSES – Fall Break		
29	12-03-13	T	+17	Guest Lecture – “Spacecraft Power” and Career Advice	HW 10 Assigned	Paul Anderson (Lockheed Martin)
30	12-05-13	R	+19	Guest Lecture – “The Future of Space Exploration”		Dr. James Stuart
31	12-07-13 9 AM – 4 PM	SAT	+21	ITLL Design Expo (9:00 AM – 4:00 PM) <i>Open to the general public from 12:30 to 3:00 PM</i>	1 <sup>st</sup> Draft of DD Rev D & FINAL Team Videos DUE @ Judging	All Teams
32	12-10-13	T	+24	Space Grant Opportunities, Class Survey, and Team Videos	All DATA DUE in class Bring all hardware	Chris Koehler
33	12-10-13 6 – 9 PM	T	+24	REVIEWS: Final Presentations	FINAL Presentations DUE @ 4 PM	All Teams ITLL 1B50
34	12-12-13	R	+26	Final Class – Review and Discussion + Final Team Evaluations	HW 10 DUE	Chris Koehler
35	12-16-13 1:30 – 4 PM	M	+30	Final Exam	FINAL DD Rev D Due @ 1:30 PM	All Teams DLC 1B70

NOTES: All “DUE” items are due electronically via email at [Prof.Koehler@gmail.com](mailto:Prof.Koehler@gmail.com) by class time unless otherwise stated above. Items submitted after class begins or past the specified time, will be late and subject to grade penalty. Files must be emailable or brought to Chris on USB driver before time due.

14 - Lecture
07 - Guest
11 - Teams
05 - Reviews
06 - Extra
12 - Extra

All Subject lines of each email submitted for this class must follow the naming convention below:  
 Homework = “HW XX Lastname Firstinitial” Example = HW 01 Armstrong N (Attachments shall be in MS Word)  
 Team Documents = “DD rev TeamName” Example = DD C RickyBobby (Attachments shall be in MS Word)  
 Team Presentations = “Review TeamName” Example = CDR RickyBobby (Attachments shall be in MS PowerPoint)  
 Failure to use this naming convention will result in your email being deleted by a SPAM filter and may result in no credit or late penalties.

1 Minute Reports are DUE each day at the end of class. Please use your assigned number and printed form for proper credit. Attendance will be taken during each lecture. It is your responsibility to find and sign the attendance sheet before the end of class. If you need anything, please send an email with the word “HELP” in the subject. Email will be routed to the top of my email inbox. [WEB] Class introduction over the web

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## University of Colorado at Boulder Recommended Syllabus Statements (08-16-2013)

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If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu). If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website (<http://disabilityservices.colorado.edu/>) and discuss your needs with your professor.

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Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student\\_code](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code)

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<http://www.colorado.edu/policies/honor.html> and at <http://honorcode.colorado.edu>