Team 1 – Spaced Out
Spaced Out has learned that every meeting must have a set purpose with a job assigned to each member of the team. The meetings should also be after a meal rather than before in order to keep productivity at a high. Something that worked for the Spaced Out team was splitting up the workload and having a lot of meetings so that each member was pressured to do their part. Something that did not work for the Spaced Out team was assigning certain sections to certain team members that did not understand that part of the project.

Team 2 – Unbroken
First of all, get ready for an extremely stressful class. Here’s a few pieces of advice that will hopefully save you a bit of trouble. Time management is very important. We had a weekly plan, and it helped us stay on track. Creating a group message was very helpful when it came to coordinating additional meetings or checking in when we split up and worked on different tasks. One of our biggest issues was figuring out a way to stay on task when meeting weekly. This led to us panicking at the last minute. It’s important to learn how to balance work and fun. One of the biggest pieces of advice that we can give you is this: start building early. Practice your presentations. It will make you seem more professional and your presentations will go a lot smoother.

Make sure you complete testing! Testing is more important than you think. You will 100% need to meet outside of class. You will meet many more times than you think you will need. Don’t be afraid to ask for help but come prepared with questions. Review your old documents and presentations and take comments into consideration when it comes to new reports. Chris and the TAs give you feedback for a reason, and they’re not going to be happy if you don’t address it. Keep track of due dates so that you’re not surprised when there’s suddenly a huge paper due and you haven’t started. Keep a good attitude towards your team and towards the project. A strong team dynamic is one of the keys to success. If you’re building a wind turbine, consider how to stabilize the payload in order for the turbine to spin. Do a lot of testing and be careful working with wind energy. It’s a lot harder than it looks. Kudos to you if you succeed.

We can all agree that this was one of this most stressful classes that we took this semester. At the same time, this was one of the most useful and rewarding classes. You’ll learn a lot about engineering and yourself as an engineer, and you’ll get to say that you launched something into near space. During those long stressful nights when it seems unlikely that your satellite will launch, keep pushing forward. It’ll all be worth it in the end.

Team 3 – Countdown to the Cosmos
Dear Spring 2016 Gateway to Space Students,
A lot of freshman walk through the classroom doors not knowing exactly what they want to do in life, and unsure if they are making the right choice with their major. Don’t be afraid of the uncertainty! Throughout the semester, this Gateway to Space class provides the amazing opportunity to delve into the midst of real life engineering. As you work on your Balloon Sat, you will learn how to work as a team, explore all your resources, and
write and present about your project. As the semester progresses, you will start to narrow down your interests and refine your engineering skills. It is amazing how much you will learn in one semester from this class, from basic programming in Arduino, soldering, to presentation and teamwork skills.

Have you started working on your Balloon Sat yet? No? Well you should start now! The last week before launch is crazy, and all sorts of unforeseen errors pop up. Use your resources!! Make sure that everyone on team is on board with the plan, and then set weekly meeting times where you come prepared to make progress on your project. Also, make a group text message! You will be spending a lot of time with these people, and although there might be some differences in opinion, your team will grow to have a lot of fun together. Make sure to allow some time for fun and team bonding, such as team dinners or long car rides where you jam out to music. Also, as soon as you can, start building and testing the prototypes of the box, and start figuring out how you can program your extra sensors in Arduino.

Come prepared to work hard and put a lot of time in. Make sure to establish a fun and inclusive team dynamic. Everyone should feel ownership of the Balloon Satellite they help to build. Again, use your resources! If you put your mind to it, you can do anything. There is nothing like the feeling of seeing all your hard work pay off as your Balloon Sat rises in the sky above you, knowing that you did all you could to ensure that your mission would be successful. So good luck! From experience, Team Countdown knows that this class will soon be one of your greatest memories.

Best,
Team Countdown to the Cosmos

Team 4 – A New Hope
Dear Gateway to Space Class,

This class has been one of the most amazing experiences for Team 4: A New Hope. Each member of the team has learned how to work with each other, how to be comfortable with not always knowing the answer to the problem, and how to build a satellite that flew in near space. Team 4 has grown close to each other over the past few months of working together, but it was not always like that. The first meeting with the team was awkward and filled with silence. It is important to introduce yourself at the beginning and realize that this team will be your lifeline in this class.

Communication with each other through text messages and Facebook group messages is crucial to the overall success of your BalloonSat and your team. Meeting at least twice a week is recommended, if not more. Though a lot has to be done in a short amount of time, it is more feasible than it seems. Another key idea for success is to create a schedule, and keep to the deadlines of that schedule. Specifically this will help with completing the proposal and design documents on time which are lengthy, time consuming papers and need to be done thoroughly and very specifically as they are crucial to the entire project and BalloonSat. The schedule also helps with testing your team’s BalloonSat with plenty of time left to fix any problems that will arise. Also with
presentations, practice them as a team beforehand because Chris can very easily tell if they were not.

The last piece of advice has to do with testing. Testing is one of the most important things you will do with your payload. It is important to do it early and often, especially the cold test. Make sure you buy enough dry ice, at least 10 pounds, place it on top of (to let the cold air flow down on it) and beside the BalloonSat, and let it sit for 2-3 hours. This is very important or else you will not have a satisfactory cold test for the temperature within the cooler will not drop below 0 degrees Celsius.

This class was one of the most rewarding times of our lives. Your team will grow very close and will learn about each other’s strengths and weaknesses. If there is ever a time when your teammate is annoying you, tell them to shut up and everything will be okay. You will learn so much from this class if you go into it with an open mind. You will not know everything that you need to do but there are so many resources for you if there are any problems or questions. This class is worth all of the work, the stress, the time and the commitment. On launch day, it will be cold, early, dark, but at the end of the day, you have launched a satellite into near space and there are not that many people in this world that can say that.

From,
Team 4 A New Hope

Team 5 – Near Space Jam

Overall, the class was extremely fun and rewarding, but not without its trials. The #1 key to success is to make sure you have a good way to communicate with all members of the group so that you make sure to meet regularly. Time is your enemy and launch day sneaks up on you very quickly. Don’t put things off because the scrambling to get it all done the day before is not a fun experience. When testing, look for help in the ITLL and test individual components by themselves and then as a whole so when failures occur you have a better understanding of what went wrong. Test wisely; don’t over-test, don’t under-test, and use your batteries wisely. Make sure you use enough dry ice for your cold test to make sure the temperature gets low enough. You will learn a lot about yourself as an engineer, how you work as an individual and as a team member. During class you’ll learn a TON of interesting stuff about aerospace sciences and the industry. All of the work required (presentations, documentation, meetings) is what actually happens in real world engineering to communicate your ideas effectively; it’ll all pay off in the long run. Good luck!

Team 6 – Sol Food

Members’ personal thoughts:
Madeline Boyes: Really have fun with the class and get into the design. Don’t fall behind, always set an alarm for sleeping, and code is harder than it may seem.

Courtney Fatigato: This class is very challenging and unlike any other class I’ve ever taken. It is also the most rewarding. Be prepared for lots of work!
Christian Maljian: As challenging as this class is, learn the strengths and weaknesses of every team member in order to use time, resources, and skills most efficiently. The key to success comes down to the sacrifices each team member is willing to make to put forth their full effort and the ability to collaborate with numerous creative ideas. You get out of this class what you put into it.

Will Song: It is an incredible class with so much fun! However, you need to be prepared to spend hours and hours on it. You should never solely rely on your teammates. If you want to do well in this class, you will have to contribute. At the end, you will realize how much fun you have and miss this class a lot.

Tejovan Parker: Getting to know your team and getting schedules lined up so you can work together very efficiently over the semester is amazingly important and helpful.

Overall message: Gateway to Space is an amazing class that we, as University of Colorado Boulder engineering students, are lucky enough to be able to take. This class pushes students to be hands-on, creative, schedule-oriented, better public speakers, better writers, and overall more disciplined. It is rare to have a class in which there is so much freedom. While the freedom is exciting, it can also be daunting. Scheduling should be handled first and foremost, and group expectations should be laid out. ASEN 1400 is genuinely the most rewarding class I have ever had the opportunity to take. Your time management skills, interest in the aerospace field, and confidence and pride in your work will skyrocket. Good luck & get ready for lots of fun!

Team 7 – Team Radical
As you’ve probably heard, this class is a ton of work and requires a very generous amount of time, however it is also the most rewarding class you will have taken in your life. You should keep in mind that the course requires a lot of dedication and a consistent time commitment. You should be ready to work hard and dedicate at least 15 hours per week working on the project outside of class. Be sure to keep true to the schedule you create at the beginning. Don’t skip meetings on any day just because you don’t have any immediate deadlines, there is always work to be done. Plan to get your most of your balloon satellite done a week in advance to avoid a brutal last week.

The most important aspect of your project will be getting to know the total strangers you are grouped up with. Even if you don’t immediately mesh well with your group, you have to work through it and learn to connect. You will be spending a ton of time together, so it is really important to find common ground and work together with ease. It is important to hold yourself accountable to do your work, because you will not have constant reminders of what you actually have to get done. You must actively check the website and make sure you stay caught up on all the homework and assignments. Other than that, it’s a lot of fun, You're going to meet a lot of great people, and make some good friends. So stick with it, and you won't be sorry.

Team 8 – Near Infinity
When organizing your wires, DO NOT use too much electrical tape. Instead, use zip ties as well as labels showing where each connection goes. Organization will help
tremendously in the end result, even if it seems like busy work at the time. Second, something is bound to go wrong, whether it is the day before launch or the weeks leading up to it. Remember that nothing you build is perfect the first time. Lastly, you are not done with this class immediately after launch. There are still many things to do including analysis and failure analysis. Make sure your team keeps meeting and stays on top of the work that needs to be done.

Team 9 – Team AWLSEM

The lessons learned from this class were invaluable, but they were not learned without first making mistakes. The mission was fairly successful, however, many different actions could have been taken to make the entire process smoother. The first problem was weight and the size of the box. The team could have been more attentive to the size of the box at the very beginning of the process and even though Endurance ended up being on weight, it could have been much more compact. Another lesson learned was the issue of petri dishes. They are by no means light and could have been easily replaced by filters, which would have saved time, money, and a substantial amount of weight. Replacing the petri dishes with filters would have also removed the need for a servo arm which was time intensive to code and proved difficult to test. The final problem was the cold test and how unreliable it was with the temperature sensor. Future teams should plan ahead and make sure they allow ample time for another test to be made, but also that their temperature sensor is working correctly.

What worked well for the team was taking the time to meet several times a week and making sure that each team member understands the situation and their individual responsibility. By setting aside the time for this class, the issues that did arise were easily taken care of because each team member was able to work on it together. Another success, and something the team would suggest to future teams, is to fly a GoPro. While it is not by any means a requirement, the photos that came back were astounding and the weight that it freed up helped Endurance immensely. Another piece of advice and one of Team AWLSEM’s successes, was practicing each presentation several times. It helped keep each member calm during the presentation, but also the preparedness made each one easier.

Lastly, and most importantly, do not forget to have fun with this class, but also take it very seriously at the same time. This class is one of the biggest challenges many of the team members have ever had, but the reward of sending off a balloon satellite and watching everything work together is an amazing experience.

Team 10 – Drops of Jupiter

Pick a good leader, it helps down the road. Find a project from a previous semester that got highmarks and read through their proposal and design document; you’ll be surprised at how much it helps. The successful teams in the class are typically the ones who work together and all contribute equally. Aside from that, make sure everyone is involved, not just because it's good for the project, but because there's so much you can get out of this class if the whole team allows it. Stick with it, because when you get through it, you’ll come out of it with great friends, a sense of accomplishment, and awesome space pictures. You’ll hate certain times and want to rip out your hair, our team surely did, but in the end, this class proved extremely rewarding.