Team 1
Dear Future Gateway to Space students,

Gateway to Space is both an extremely challenging and extremely rewarding class. You most definitely will get out whatever you put in. It’s easy with group work to just let only a few people do the work, but that is definitely not what is best. Make sure to put a lot of effort toward collaboration and meeting. There is a lot that goes into figuring out how to build a satellite and how to make it work. For a mission to be successful, the team must first quickly learn how to work together successfully. If this were a task possible for only a couple students to complete themselves, the teams wouldn’t be the size they are. Set deadlines and begin building, coding, and testing earlier than you think you need to. This is not something you can just throw together in the last week. You can’t predict what problems you will face, but you can expect many and allow for time to fix them.

Remember though, that this is an amazing opportunity so take advantage of it. Most of what you learn in the class is something most students taking it have never done before. Push yourself to do something you’ve never done before and you’ll soon realize how valuable this experience can be. Everything adds to your body of knowledge, as it will improve your critical thinking skills and teach you how to design and build an entire system start to finish.

This class is seriously a rollercoaster. There are the highest highs as well as the lowest lows. If you put effort towards creating a positive team dynamic and make the best out of every second, I am sure you will never forget this semester and will come out with unexpected new friendships that will last a lifetime.

Team Starfleet

Team 2
Don’t save anything for the last minute. If you get in arguments with your team members keep an open mind. Everyone is a valued member, and everyone’s opinion matters. A team is only great if everyone is passionate and tries as hard as everyone else. You may discover this isn’t what you want to do, you may not want to continue with the class or even the group and think it’s an obligation, it is at that point that you must realize that this project isn’t just about what you personally want to and don’t want to do, it’s about your entire team. Lack of effort on your part will result in failure of the whole team. We would not have done anything differently, everyone contributed well and people gave well more than their all when they had to.

Team 3
Team Return of the Engineers made an incredible amount of mistakes this semester. It is in no way embarrassing; mistakes are all part of the learning process. Three major mistakes stand out above all to the team: NEVER, under any circumstance, for any reason, even if your family’s life depends on it, should a team ever buy gas sensors from SainSmart. The sensors are terrible build quality, are connected to a chip with no purpose, and have ABSOLUTELY no documentation of any kind. These sensors were the downfall of ROTE’s project for the first weeks of this course. The team’s second
mistake was waiting even just one week before reaching out to campus labs with the purpose of testing sensors in controlled gas environments. Even early in the semester, the labs are incredibly busy and oftentimes, freshmen are not their priority. Waiting just one week ensured the team would not have a controlled environment to test in, and made Team ROTE’s semester ten times more challenging. Third and finally: take more videos landscape, not portrait. The team did not take nearly enough videos of anything throughout the semester and it caused quite the challenge when it came to the Design Documents and the Team Video. The pictures and videos the team did take were often low quality and in portrait. The team later realized that it was optimal to have more videos and all media be taken portrait because making the team video was very difficult. To those reading this and beginning Gateway to Space for the first time: Good luck, manage your time, and don’t buy from SainSmart.

Team 4
Next semester's class should be extremely thrilled by the prospect of launching their payloads and what the semester has in store. The Savage Seven would encourage next semester to maximize time in their team meetings and be productive during every meeting. The Savage Seven would also encourage next semester to begin to work as early as they can and work together because it will be a long semester if they don't actively choose to get along. Additionally, plan ahead and prepare for the worst case scenario. Chances are, this worst case scenario will occur and it will be best to be so well prepared. It will be an extremely fun semester, but it also will push individuals to seek new heights and challenge themselves to complete new tasks. The out-of-class work time is extreme, so be prepared to do all of the work out-of-class. What worked well was delegating tasks and allowing people to do things that they are passionate about. What didn't work was not having a plan for every team meeting, which led to a lot of wasted time. The Savage Seven hopes next semester is up for the challenge.

Team 5
The project Gazini team would like to say to the next semester of the Gateway to Space class that this class is a lot of time, work, and effort. Many days you will find yourself spending a lot of your free time or study time instead working on different aspects of the class. Most of the time when you seem to think your engineering schedule somehow allowed you free time during the week, but then you remember this class and you force yourself to attend your team meeting while holding back tears of sadness from having come so close to having free time. Pre-launch there is a ton to do to prepare yourselves and your satellite for launch, especially if you choose a more complex experiment. However, don’t choose a super easy experiment just because you can, part of the fun is trying something difficult. Be sure to reach out to on and off campus resources that you will be needing as soon as you can. Start planning for your volunteer project as soon as possible.

Post-launch, you may assume that all the work is done and you can slack off for the rest of the semester. Do NOT assume this. The design expo, data analysis, and Design
Doc Rev. D take a significant amount of time and the due dates of these things can easily sneak up on you.

Team 6

Team Flying through the 6 with my Woes has learned that above all, it is most important to schedule regular meetings at least 3 times a week to keep all team members informed and productive. The team especially benefitted from a layout of each meeting posted in the group chat. Morning meetings, as much as they were not desired, were helpful because they allowed team members to work on their schoolwork in the afternoons. What Team 6 found did not work was unproportioned distribution of work among team members. If a team member, because of their team role (Software, Design, etc.), had too much assigned to them, other members each volunteered to take some of that workload. In the end, the best advice that Team 6 can offer is to just have fun with the class, as cheesy as that sounds. Work hard on your satellite but do not forget to take time out of the day to bond with your team. Get food together and do fun things because at the end of the day, how well you can work with your team and get along directly contributes to the quality of your final product. It is honestly pretty terrifying to be given so much freedom with a project, but what you realize later on is that just like your satellite changes throughout the duration of the course, you will too in a professional way.

Team 7

Gateway to Space teaches hard work and determination, both individually and as a team. In this class, you will work hard. Creating a quality final product requires multiple team meetings a week, as well as a great deal of individual work. Planning these meetings ahead is essential for success. Gateway is very helpful for learning to use your resources, because this will be incredibly important for the success of the BalloonSat. Professors as well as other staff around campus will be your most important tool, so become friendly with them. You will only get out as much as the effort you put in. If you invest fully in your project, you will learn amazing new skills and meet really cool new people around campus. If you slack off, not only will you drag your team down, you will not learn as much, and the process will not be as enjoyable. Most of all, have fun, because this class can be extremely fun and rewarding, but it can also be a drag if you let it stress you out too much. Good Luck!

Team 8

Always stay on top of the deadline. Do not fall behind. Work as hard as you can. Once you fall behind, you will NOT be able to make it up. Start working when the work is assigned. Treat every day like the deadline and never procrastinate. You will encounter unexpected problems, and you will spend countless hours trying to resolve the problem. Expect to have a few all-nighters before flight, and to lose contact with your friends in the week before flight. Make sure that everyone, or at least most of the group members know how to use Solidworks, and have access to the laser cutter and the 3D printer.
Otherwise, the workload distribution is going to be extremely uneven. Also, make sure everyone understands the mission thoroughly so they can participate in editing and improving all sections of the design document. Last but not least, most experiments in the course fails. So do not be sad, you would not be the only one. Learn the most you can from the experience and activities.

Team 9
So, you are in this class and ready to work on a satellite that will go up into near space. You guys are probably pretty excited, but Team IRIS is going to be honest about a couple of things. First and foremost, you will be a part of a team in a very intense project. Make sure you work together and work often, because time is not on your side. Also, this class will be hard. You will probably lose sleep over it because a sensor that worked perfectly fine doesn’t work anymore, or you have been through your 3rd satellite because your other two broke during testing. But you probably choose this class to launch a BalloonSat, and seeing that project that you worked very hard being launched, and you recovering it with your team will be totally work all those hours, trust us. Get outside help when you need it! Time is a precious thing that will always run out during projects, so if you are stuck and you can’t figure it out after a day or so, go to the electronics center, Dan Godrick, or Chris and the CA’s for help! If you keep talking to them, they will understand your situation and guide you towards a solution (note, they will not give you the answer, even if they know it!). Chris and his CA’s also grade very harshly on documents and presentations, (partly why this class is hard), so prepare for harsh criticisms and work at it! These criticisms will apply on other projects and engineers have to work in groups, write technical documents, and do presentations all the time, so learning from them now will help you in the long run. Otherwise, everyone is super nice and super helpful if you are proactive and ask questions. If you plan on using gas sensors, never use Sainsmart sensors. Their sensors do not carry documentations, and there is a 20% chance that they will work. Team IRIS was not that lucky.