Enclosed are the student comments from the Spring 2006 teaching of the Gateway to Space course (ASEN/ASTR 2500). The class met on Tuesday/Thursday from 2:00 to 3:15 PM. There were 58 students in the course and they were divided into 11 teams. There comments here are unedited (misspellings included). It was not required for each student to submit their comments and each had the option of submitting anonymously. The question asked of the students was the following: “Were your expectations for this class met? Please describe. Be honest, will not affect your grade. You may use the suggestion box on the class website.”

1. I had very few expectations for this class, mostly because I did not know quite what it was all about aside from the balloon-sat project. However, upon completion of the course, I realize the influence the course has had on my decision to pursue the field of Aerospace Engineering. Last semester I was highly questioning my choice of major, mostly because I had not yet experienced all it had to offer and was restless to learn relevant information. ASEN 2500 was designed in such a way that I feel I am very prepared to begin my sophomore year. With the guest lectures and the hands on experience and the informative lectures introducing concepts to be learned in the next few years and the superior instructor, I look back on the class very pleased with the experience. This is by far the best class I have taken so far at CU.

2. When I first signed up for this class, I was hoping it would give me a good introduction to the aerospace engineering major as a whole, and this class did just that for me. I really enjoyed everything about building the BalloonSats. Also, this was one of the few times that I’ve worked in a group of randomly chosen people, so it was interesting trying to work with people you’ve never met before. I also found the guest lecturers interesting for the most part. If there was anything that I didn’t like about this class, it had to do with how my group functioned, but that was something that we needed to work out ourselves. So I honestly enjoyed taking this course! In summary, what I enjoyed most about this class was that it gave me a taste of both my future classes in aerospace, as well as what my future job will be like.

3. Honestly, this was a great class. I loved the fact that I was finally able to get out there and do something with my skills in addition to slaving away with basic academics, and it gave me a more clear idea on how the aerospace field works what is expected of us, and how to work on a team and manage it. You gave us guidance on professionalism, writing detailed reports; for me, it was a real eye-opener to the real world. The only expectations that weren’t met were expectations of my own, since our balloon sat experienced a near-total failure at flight. Regardless of that fact, however, I met some great people who I will be friends with for a very long time, and, academically and professionally, gained a significant level of experience. Oh, and I led a team to design, build and launch a scientific device that ascended to 99,800ft. I mean, seriously. How cool is that?

4. For this class I was expecting to learn how to build and then launch a balloon satellite. In this respect my expectations were met and overall it was an amazing experience that I would recommend to anyone. It was a good learning experience that changed how I thought of the aerospace industry. I now know more about how much there is available to do in the industry and how many opportunities there are out there to experience. The only part that I didn’t like was having to work in teams; I understand that there was no other way to accomplish the satellites but it was a learning experience I people skills, too. I just think that it is hard to have a group of people that all want to work and get things done in a timely and efficient manner. The only part of the class that did not fulfill my expectations was the failure of our mission and the missions of most of the class. At the beginning of the semester I was under the impression that the RFP requirements, though difficult, were expected to be successful. If my memory serves, only two teams met the internal temperature requirement, and only team AEMBLE had no failures.

6. I didn’t really have any expectations about this course. The only thing I knew was that we were going to launch a balloon sat and we did that.
7. My expectations of this class were met. I thoroughly enjoyed every aspect of this class and it was a total learning experience. We were able to learn the process of professional construciton. We learned how to write a proposal, design documents and initiate our ideas into a real satellite. The parts of this class that I enjoyed the most were my group and the chase.

8. Yes, my expectations for this class were truly met in retrospect. In the beginning, I honestly did not know how the semester would play out. However, now that I look back on it, the course was everything and more it was described as. I learned a great deal about team dynamics, problem solving, and the design process, most of which I believe is because I was a team lead. This was a fascinating and exciting semester that exposed me to the basic engineering process.

9. <<Below>>

I would definitely have to answer yes to this question. I had a good time in this class. Even though we got off to a rough start, I feel that I could not have asked for a better team (especially considering that they were all freshman). Beside launch day, I think my favorite requirement of this class was the ITLL Design Expo. I enjoyed preparing for it and having the chance to show our project and results to those outside of class. I was slightly frustrated by the lack of straight answers to our questions throughout the semester, but I guess that I understand the need for it. I truly wish that I could have taken this class earlier in my time spent here at CU, but I do not regret taking it right before graduation. It was nice to get a hands-on project to remind myself of why I chose an engineering degree along with my astronomy degree. Thank you.

10. Yes, I learned a ton from the class. I thought that the class described the field of AE well. I thought that it would be a good idea to provide more feedback to the class on mission progress and your idea of how they are doing and if they have a worthwhile experiment or not.

11. My expectations for the class were met and exceeded! The entire BalloonSat process was very educational and fun. Lectures not directly related to the payloads were also informative and useful. Team dynamics were a little shaky at times (especially towards the end of the semester), but we were able to pull through and make things work. Also, despite our multiple failures, I still feel confident that I benefited from the experience as a whole.

12. This class has been the most enjoyable class I’ve had all year. My only expectation coming in was that I would be able to participate in a challenging and stimulating project and learn about pertinent aerospace concepts. All in all my expectations were exceeded. I never realized how challenging, fun and stimulating the entire balloonSAT project would be. The guest speakers as well were interesting and informative. Being exposed to such information I find invaluable for my education moving forward.

13. My expectations for Gateway to Space were high when I was about to start my second semester at CU. It was the class I was looking forward to the most and I found that it lived up to expectations. This class has been an amazing experience. My team has been outstanding. I have learned so much of what it is to work with a group of peers to get something done with limited budget, mass, and time. I found it incredible that we were able to accomplish so much. We were dedicated but had a few internal issues. Nevertheless, I was lucky to work with some very knowledgeable people. I also liked the lectures. They were great because it wasn’t all work. It was great to be able to joke around a little bit and watch the movies at the beginning of each class. The guest lectures were very interesting as well. Though some of what they talked about was hard to understand, some of them were very engaging speakers and had my attention the whole time. All in all, this class has easily been the best class I have taken in college thus far. I learned to solder which helped me in my EE class that I took in conjunction with GtS, I was able to see a little of what Space Grant was like, I went to launch and recovery which was an experience of a lifetime, and I read probably the best memoir I’ve ever gone through—Rocket Boys. Reflecting on it all, Gateway to Space has gone above and beyond my expectations. Thanks a lot for making it so great!
14. My expectations were not quite fulfilled in this class. I came into this class under the false illusions that everyone would have the same infatuation with the course material I did. In order to complete a project of this magnitude as a cohesive team takes dedication, but above all interest. It turns out, however; that the matters in question were entirely out of control, and it was just the luck of the draw. I enjoyed this experience and would recommend this class no questions asked, but only to those who are truly infatuated with space and the course material as I am. The saying “Imagination is more important than knowledge” -Einstein really plays an important role in the course. It is great to research the material or sciences until you know it, but when engineering something of this stature a great deal of imagination must be poured into the mold to implicate a success. I believe this course improved my imagination in the process of design to final product during the duration of the project. This course did fill my expectations of being a great experience with some ups and downs along the way. I really believe it helped me as a person to see how others think and interact on a large project especially as a team leader. I learned some problematic duties of a team leader and handled a tough situation as best as I could. In addition, I believe the course satisfied my expectation to receive a grade but also receiving that awesome experience along with the grade.

15. I didn’t expect much from class because all I really wanted to do was have fun, which I did. Although I was hoping for a larger payload, once I learned we were being carried by a balloon, it really didn't matter much to me. In the future though, it would have helped to know that this could have replaced a GEEN project class… that way I would have taken this instead of GEEN 1400 last semester. For some extra information- I am still not sure I understand how to set-up a communication relay between the balloon satellites and the ground. It would be cool to learn how to set-up an experiment where you can actually communicate with your satellite or allow it to send data to you.

16. I believe that my expectations for this class have been met. And I am not just saying that! One of the aspects that I loved that this class offered me was more information about what exactly Aerospace is and what makes it such a challenging field. This class definitely got me thinking about my future and what my goals are. I also obtained a lot of important advice from the lecturers who came a long way to give us their advice. I also enjoyed working on the project and I would love to do it again. I am definitely applying for Space Grant this fall. I would have done that this summer, but there are some things that I need to do this summer before I can plunge right into important work like this. After this summer I will definitely make a great candidate and I am looking forward to it.

17. My expectations were met for this class. The only thing I found frustration was that there seemed too little work for 6 people to be in a group. I would strongly recommend smaller groups in future classes. I felt like I had a toe hold in every system of the satellite but there was not enough for me to have something that was my "pet project." I also think that we could have used less in-class team time and more guest lecturers. They were fascinating and I would have liked to see more of them. Beyond that, I had a great time working with my group and the class activities were all enjoyable.

18. My expectations for this class were exceeded. I suspected that this class wouldn’t be as intensive and challenging as it was. I knew it would be fun to build a BalloonSat, but I never expected to form such strong bonds with my team and be able to rely on them in the way that I did. It really was quite a lot of work to get everything done, and I’m very glad that it was challenging for me. The lectures were informational, but I could tell that during some, many people in the class were getting bored. More interaction during these lectures might be advisable. Overall, I am very pleased with this course. You are a good instructor and a good friend.

19. It was a great experience being a student of your class. The class has been a funfilled learning experience. Thank you

20. My expectations for this class were both met and exceeded. I very much appreciate the skills I have been able to develop because of this class, including but not
limited to soldering and elementary circuit board assembly. I also very much enjoyed the group experience, and would take the class again if it were an option.

21. The expectations that I had for this class were not only met, they were greatly exceeded. I came in knowing nothing about satellites and subsystems and all of the components that go into a payload. After this class, I have a better understanding of spacecraft and all of the work that goes into creating a functional payload and successful experiment. It helped to actually get hands-on experience and gain a sort of independence from the norm. All of the subsystems were created from each of its components—not just handed to us completed. This was the greatest feeling to actually come up with an experimental idea and having everything work, knowing that each piece was put together by your team. This class has been very beneficial to me, and I would definitely recommend it to anyone who is even remotely interested in space.

22. My expectations for this class were completely met and exceeded. I expected this class would be a lot of fun and show me if I really wanted to be in aerospace engineering. I am still not completely sure but doubt I ever will be. However after this class, I think I have a better understanding of what being an engineer means by working through the entire design process with a team. At this point, I think that I want to be an engineer after seeing some of the hands on things that engineers do and hearing from some of the different speakers. This aspect of my expectations therefore was completely met. I also expected to learn a lot about the different aspects of spacecraft engineering which I also did through the many lectures and guest speakers.

23. Overall my expectations in this class were met. I wanted to learn more about what it is like to work with a team to design our own experiment. I was also very exited about building a balloonsat and the whole process was very invigorating. I wish I had learned a little bit more about the circuits and other given hardware. How they were designed and how exactly they work. I learned alot more about what working people in industry do, which was something I was really interested in. I learned a little more about the launch vehicles but wish I could have learned a little more in what goes into them. Overall my knowledge of the aero field was greatly increased and the class definitely made me want to further my learning.

24. Thank you very much for an outstanding semester, sir.

25. My expectations for this class were beyond met. Gateway to Space was everything I had hoped it to be and much, much more. Throughout my experiences this semester, I learned a wide range of skills and aerospace knowledge (ranging from circuitry, to GPS bistatics, space environments, and career advice). Originally I thought this class would be similar to my Freshman Projects class with a space twist, which I would have thoroughly enjoyed. Instead, I quickly learned that there was more hands-on learning and overall enthusiasm for space exploration than I had anticipated. The application of this class to the real-world and passion of space shared by staff, guest speakers, and fellow students made this class absolutely wonderful and memorable.

26. Yes. I expected to learn about space, about orbits, history, and where the industry is going. I expected to learn how the engineering process works, and how to succeed in the rest of my life working for a related company. My only disappointment was when our project was unsuccessful because of one broken wire. It was very frustrating when it did exactly what it was supposed to do minus ONE failed part of the system. I’ve learned exactly what I hoped to...that I want to experience stupid failures like this every day in my career. I want to spend months working on something, striving to make everything perfect with equations and testing, and then learn, in the end, from trial and error. Even though my life was a living hell this semester, I did have fun and I did learn something; exactly what I expected.

27. Yes—actually, my expectations were exceeded. I did not expect to have to put in the amount of effort that I did. However, my team’s mission was successful and we have a 30-page document to back it up! It feels good to have done all that work. Also, the launch and chase was ENTIRELY worth getting up at 4:30 for. I didn’t think it was going to be that exciting, but I was clearly wrong.
28. Well, after taking this class, I got a pretty good taste of what engineering is all about. It was fun, but a lot of hard work! I learned how all the different components work together to form a system, and why each is important. Not only is it important to be able to “over engineer simple ideas”, but also to understand the data and analysis of the mission. That incorporates both the engineering side as well as the scientific side. Not only did I learn about basic engineering concepts, but helpful problem-solving strategies for the future. This gave me enough experience for a starting point in my career. With all the guest lecturers, I gained some important insight. With this motivation, I worked hard, nearly everyday, on the task at hand and my team and I were successful. This class was very well organized, and it really helped guide our own structure for the group. All in all, my group was phenomenal! I loved working with all of them. We didn’t really ever have any issues during the semester. I’m thankful for that, as I know other groups weren’t as lucky. We learned a lot as a group – that hot glue is unnecessary, and to tape all battery compartments in place. We have learned from our mistakes from further analysis after launch. Unfortunately, we weren’t as successful in our overall mission, but we were, rather, in our learning experience.

29. Even though, I had already fulfilled the degree requirement for a freshman projects class, I still wanted to take Gateway to Space. The idea of building a satellite so soon in my aerospace engineering career seemed fascinating. Before stepping into the class, I had expected to find an environment similar to my engineering projects class: hands-on activities, guest lecturers, team work and engineering! I had a positive impression of the class on the first day. I enjoyed the different kinds of skills we learned throughout the class such as soldering, building a 555 timer circuit and heater. These provided a taste of engineering. The lectures during class were helpful in providing a bigger picture of engineering and introducing specialized fields that we might be interested in as we shape our careers. In addition, they were also a great opportunity for us to meet with leading industry professionals and our future employers. The class structure seemed to be well spread out for one semester. However, considering the amount of work load we had, it would have been better for the class to be year long. In this case, we would have been able to spend more time with our data and could have done a better job on analyzing and reporting our findings. In any case, this class did meet my expectation and I enjoyed myself being a part of this class. I will definitely recommend it to anyone who is interested in space.

30. My expectations for this class were met in that I was expecting to have some real world experience as to how to put together an aerospace project. The one thing that I was expecting was some more feedback through the revs of the design document. I think that if we were to get feedback at each of these steps it would be more valuable to finish them in parts. Without the feedback, it seems like you could cut out having to turn in the revs as long as you were working on the document on the same time frame.

31. Yes, I expected a really fun experience in this class and I had a good time. I learned a lot about working with a team, group dynamics and hands-on experience. I enjoyed this experience because it gave me a chance to build a small scale satellite as a freshman.

32. Without a doubt, my expectations for the Gateway to Space class were met and even exceeded. The lectures for the most part were good and I now have a very good overview of what to expect in the aerospace industry. I am very excited to have learned how to solder and I know that it is a skill I will use for various purposes. Building and launching the BalloonSAT has been far more instructive than I ever imagined and I have learned much about the design process. The Design Document was one of the most helpful items throughout the semester, because it forced us to keep up with the documentation. Because of this, I have a good idea of what a quality proposal and design document should look like. Finally, working with Stephan Esterhuizen has taught me a lot about GPS and I now have more knowledge than the average aerospace engineering student on this topic.

33. This class succeeded in giving me a general idea of many different aspects of the aerospace engineering field. Along with the hands-on experience I gained from building
a balloon satellite I feel I learned some very valuable lessons about communication and teamwork. Overall this class met and in several instances exceeded my expectations.

34. The class was pretty much what I expected it to be, it was fun, informative, and a great freshman project experience. My only complaint is that with a concurrent MS/BS senior in our group I wasn't able to participate at the level I would have liked. He designed and constructed pretty much the whole satellite. The other 5 of us were restricted to support role making presentations, cad representations of the design, writing the design documents & RFP, consulting with Stephan, and doing minor things for the construction of the satellite. Between the 5 of us we programmed the hobo and made the small foam core covers for the antennas. During the design process whatever he said went, because naturally he was a grad student and knew more than we did, it was far from a consensus that we should use aluminum, he wanted to, and said it was necessary so we did, despite our reservations. I realize that these complaints are late and perhaps I should have voiced them earlier but I feel that it will be useful in the future for you to know that this should be a first year design class so that first year student can get the experience and learn from his/her mistakes. We didn't need a senior, and probably would have learned more without him.

35. My expectations were met; however I did have a few issues. Some of the issues I had were personal issue with my team. For example, at times some of the guys on my team would talk down to me, suggesting to me that they didn't think I fully understood what was going on. This frustrated me, but from it, I learned that as the only girl on a team of all guys, never say sorry, take responsibility if you do something wrong, and let it be known that you are just as qualified as everyone else to be there. I also really wish our experiment had functioned correctly. I think it would have been really interesting to gather uncontaminated results. Nonetheless, I found it unique of my team to try and bring the two disciplines of engineering and biology together. One final problem I had with this class was the amount of guest lectures. I enjoyed a lot of them, don't get me wrong, but I feel that some could have been cut from the class to allow for more in-class team interaction. This would have been especially helpful toward the end of the semester, making things seem a lot less rushed.

36. Some of the high points of this class include the fun I had and the amazing experience it created that will help me in my future classes and my future career. The group interaction skills I am going to take away from this class are truly something I will be able to use for a long time. I have never had to work on a project for this long with the same team, so it was very interesting having to depend on other people and having other people depend on me. If anything, the building and testing experience I gained was most helpful. My expectations in this area of hands-on understanding were definitely met, if not exceeded. I really enjoyed how everyone on my team taught everyone else about their individual strengths. This idea allowed for a wonderful learning environment; at least for me it did. Also, the data and error analysis is what made my entire experience a success. I probably learned the most in the last couple weeks by fully understanding what went wrong and how things could have been made differently. All in all, this class did meet me expectations, and I would recommend it to anyone who has any interest in gaining hands-on experience in the world of engineering, or I suppose even biology.

37. I would say that my expectations for this class were met. I wanted to get an overall knowledge of the basics of aerospace engineering, and I believe I did. I think there was a lot more outside work that I was expecting, and given my year and the other work I had this semester, if I had known that I'm not sure I would have still taken the class. But, at the same time I gained a lot of knowledge of aerospace engineering and enjoyed the class. It was interesting having a proposal and revisions and presentations, I thought that really added to the experience of how the real world of aerospace works, whether I like it or not.

38. My expectations for the class were met in almost every regard. I don't say this to say what you like, but because it is true. I didn't think that sending up a little box would be so cool at first, but now that we have our results back I am amazed at
what exactly we did. My team wasn't very active, but despite I managed to enjoy the time. I will admit that before I signed up for the class I was under the impression that we would launch on a rocket, and getting use to the balloon took time. But now I think it was amazing.

39. My expectations for this class we're not completely met, and honestly I was slightly disappointed with the class. But, I’ve learned a lot from the difficulties this class presented, and I have grown personally from dealing with a team of young people in a work-style environment. Originally I expected the class to not be so much work, nor the work to be so entirely frustrating. But, I didn’t expect the Professor to have such a good sense of humor, nor the help from ITLL staff to be so beneficial. Group difficulties helped me learn about my own strengths and weaknesses, and also how to put up with other’s weaknesses while emphasizing their positive qualities to make the project work. I also had a glimpse of what it is like to be an engineer in the real world, to deal with failure and look for the gain in your failure. So, overall despite my original expectations being slightly shattered, looking back I am glad to have been in the class anyways.

40. Overall I think that this class was really great. It met all of my expectations. It was fun and exciting as well as a great class to meet new people and develop friendships along with getting great team experience on a project. I also learned a lot about the design process and how projects are formulated then put together. One thing that I think would be helpful is to separate the lectures with team time or some other work in between because a few in a row got a little boring. Also you might try to arrange the topic of the lecture to be similar to the points that the groups are at in their satellites. So have the power systems lecture right before the building of the heater and timing circuits if possible. Otherwise I really enjoyed the class and had a great time.

41. The class went well beyond my expectations in most areas. Building the satellite and everything involved with the sat was an incredible experience. Lectures were great once we were outside the realm of the satellite projects. From Rocket History to Space Environments to Systems Engineering, all of them were an excellent learning experience. I wish we could have fit in all the planned lectures. Occasionally classes felt very unproductive, but that was an occasional occurrence. All in all, I am definitely glad I had the opportunity to take the class!

42. my expectations were met very well. i was expecting to learn a lot about the space industry and space exploration in general and this class did both very well. i was also very excited about the balloonsat and was a big part of my groups project. i have really enjoyed this class and the relationships that i formed through it.

43. Entering into this class, my expectations were that I would get to build something, and send it to space. I hoped to get pictures and to actually put something into space. Essentially, all these expectations were met. I had fun in this class and was able to build a cube. Getting hands-on experience was really good. It was really cool to see that my satellite reached about 99,500 feet. I am proud of that. Overall, this class exceeded my expectations. If anyone asked me about college this semester, I would talk about this class first because I enjoyed it more than my other classes. The idea of Design Documents was really good, along with the presentations, because I have heard many in upper division classes and in industry talk about their CDRs or other reviews and I know what that entails. This class gave us some real world applications. Probably the only major complaint that I have is with the camera equipment. We did not get pictures because one of the camera wires broke. I take the blame for putting stress on that wire that caused it to break. But my problem is that the wire was really flimsy and not easy to work with. So I suggest for future classes, that the camera wires are reinforced or changed to be thicker. The class itself is really good!

44. I feel that I've learned more from this class than any other class I took this semester. This class was really an example of 'get out what you put in'. My friend (in another group in the class...) didn't put in a fraction of the effort that I (and other members of my group) put into our project, and I can tell, by talking with her,
that this class wasn't as valuable of an experience for her as it was for me. Sure... like you said in class the other day, we'll all get relatively the same grade, and that probably would have bothered me before this semester, but this class has honestly helped me realize that it's not even about 'the grade' as much as it is about any experience you can get your hands on. I got the opportunity to work as project manager for my group, and that experience was INCREDIBLY invaluable - not only do I feel it was a crash course in group dynamics (or lack thereof...), but I also feel it was real-world experience that I can walk out of this class with, and take to an interview for an internship and eventually a job. There was some serious animosity between myself and a particular member of my group in the beginning (actually... even in the middle) of the semester, but once we worked through it, we actually became friends, and the general 'flow' of the group GREATLY increased. I would also like to tell you that I think one of the most valuable parts of this class was the video you recently showed with all the different pieces of advice from the different professionals. I couldn't believe what I was hearing when one of them said (something to the effect of...) "You might feel unintelligent because you have to work a lot harder than other people, who seem to breeze through everything they do..." I seriously felt like he was reading my mind! (corny... but true!) So yes... my expectations for this class were met, but I would go as far as to say that they were exceeded because honestly, walking into this class, the only expectation I had was to be able to walk out saying that I'd launched a balloon satellite. This class turned out to be funner than I EVER expected, and I've actually met people that I never would have met if I had only stuck to classes within the ECEN department.

45. The first thing I expected to get was the experience to build a satellite which I had not accomplished during Freshman Projects. Apart from learning from building the satellite itself, the speakers from Lockheed Martin, MicroSat Systems, Instar Engineering and many more. They shared their valuable time and provided us with a great deal of understanding with their respective fields of expertise. In general, the class was fun filled experience, I loved my team, it gelled very well. Humor is one thing I was not expecting from this class and Chris provided bags full of it, sometimes with his videos and presentations. This relieved stress if we had any at that time. The fact that our experiment was a success was one of the biggest rewards from the class. Lastly, I gained experience that can be put in my resume.

46. My expectations for this class were not only met but were exceeded. I was hooked the first day of class when Chris came in with his nerd costume and acted really funny. Not only did it lighten up the mood but it was a needed stress reliever for the school day. I view the class as a very informative but also fun class in which I can learn and apply engineering principles to something tangible. This has helped me learn so much more about my studies and has helped me apply them to real life situations. I am especially satisfied with the "free" approach of letting students design everything from their science experiment to the structure of their box. This freedom gives groups a broader experience and allows them to problem solve more. This great class has inspired me to stay in engineering and that while there are many obstacles in my way, there are many rewards that come in an engineering career.

47. I would say that my expectations for this class were met in this class as I had initially taken the class to gain experience with satellites and learn more about the space environment. I had taken this class mostly to gain more knowledge of what the Aerospace discipline was about. This course has given me a great deal of knowledge with the background as well as the history of the field with the presentations and guest speakers provided. I had not known much about the balloon satellite project in coming into the class so I did not have much expectations of it, however, the project indeed provided me with hands on experience with the design process and construction process involved in producing air/spacecraft, which will be helpful also when working on my senior project.

48. My expectations of this class were probably over-achieved. I did not expect to have such a literal hands on- solo approach to nearly every aspect in the project. The class really was sink or swim, which I believe is one of the best ways to learn. Although this class involved more work and dedication that any of my other classes, it was also the most fun and most rewarding. However, being independent on the project
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did have its negative side sometimes, more specifically, working with the BASIC stamp proved to be the most difficult part. Perhaps this could be helped if the professor could sit down with each group for maybe a half an hour during the final weeks of their project, to help work any bugs out, and make some educated suggestions.

49. I believe that all of my expectations were met for this class. I grew as a person working on a team and taking on many responsibilities throughout this semester. I enjoyed this class and thought it was an amazing experience. Thanks for being an awesome teacher. You made it fun and enjoyable for everyone. Thank again

50. Gateway to space was a fantastic class. The hands on experience gained from building a satellite and the presentations was a unique gift. This class is setup to make students take a far more active part in their education then most classes. I probably spent over 100 hours working on our project and I don't regret a single second of it. The experience I gained was priceless and it set me on the path to really keep my future goals in mind and it encouraged me to take an active part in my undergraduate learning by encouraging me to do internships outside of class at Space Grant. Had I not taken this class I would never have heard of space grant. Also during the course of our project I got the chance to meet up with other professors on campus who helped give me the ideas to create a truly remarkable project. I met a Microbiologist, a Lab Director, a Gentisits, and an atmospheric and planetary physicist. I found our project and the science behind it extremly exciting and working on it was very enjoyable.

51. This class far surpassed my expectations, its setup lets anyone be able to come in and develope a balloon satellite. At first i thought this was going to be a very technical class and I would be swamped with busy work, I was worried that in such a large class I wouldn't be able to make any connections with my fellow students but the idea to form smaller teams really made the difference. I would recommend this class to everyone! Thanks for a great semester!

52. I have to say that I did not have a whole lot of preconceived notion of what this class should be like before the semester started, so it is difficult to answer whether my expectations were met... However, I am happy to answer that question in a broader sense by comparing it to the rest of my college courses and telling you what I thought in that context. As astrophysics major, I generally expect my college courses to be challenging. I would have signed up as a fine arts major if I was interested in going $30,000 in debt to get a half-assed education. I found this class challenging, but in ways that I'm not typically used to. Unlike virtually all of my other classes, in which I spend hours or days laboring over messy physics or math equations, this class had no real soul-crushing problem sets, exams or quizzes. It was a nice change of pace. However, in Gateway I was confronted with new working situations and problems that required virtually as much time and effort. Working in a team is of course the first thing that comes to mind. Very few classes as a science major require any teamwork at all, and those that do require a small midterm project or other minor task where you are assigned (or pick) groups that you’ll work with for a couple weeks and that’s that. This class was challenging, because it required students to find the suitable dynamics within their teams to ensure that sustaining a working relationship was possible throughout the semester—a definite novelty. And while this class isn’t particularly “hard,” it certainly required a greater time commitment than any of my other classes this semester. When the grades of others are dependent on the work you do, I’ve found that you generally do a far more meticulous job than when working independently. Which, now that I think about it, is pretty analogous to the working world. In addition to a challenge, I also expect my courses to be fun. As you are well aware, your course is popular for this reason. You seem to enjoy teaching the class as your students enjoy taking it, which says a lot. This is a truly enjoyable class—from the opening film on the first day to whatever surprises you have planned for the final (I personally think you’ve got something quirky up your sleeve). The last thing I expect from all my classes—and the part where I feel your course falls short—is instructor presence. Hear me out on this one. I am not interested in large lecture-style classes where the professor has 600 students, doesn’t know anybody’s name and never has time to answer questions. This class isn’t quite that large, but I
feel that there were aspects of that in this course. I know you have to work within budgetary constraints on one side and departmental requirements for class size on the other, but I felt that you were sometimes difficult to contact, feedback was often late and very short in length, and I got nearly no individual or team time with you. I’m not saying this is in any way your fault. In fact, with your 1-minute questions and some of the other features you’ve built into class, you’ve clearly noticed this too and attempted to mitigate the impacts of a student-to-teacher ration of about 60:1. What I would love to see in an ideal world is perhaps half the class size that we had and a grader for homeworks and REVs, so that we can get feedback that is more complete and get it sooner. Again, I hope you’re not taking this as a personal attack. I know very few professors could pull off teaching this class. You did a great job with the resources you were allotted. I guess I’m just complaining that it is unfair of the engineering department to give a class this size and with a hands-on and instruction-intensive focus to one teacher without much support. I suppose my complaint is more of an intuitional gripe than anything. Anyhow thanks for reading this and thanks for a great semester.

53. My expectations for this class were met. Building an operational satellite was a great experience. My only problem was that the brochure doesn't say how much work goes into working on your BalloonSat or time spent preparing presentations and documents. Overall this was a great class.

54. About one half of my expectations for this class were met. Among those that were: I gained knowledge in electrical engineering of hardware. I gained a greater understanding of the aerospace engineering profession through the guest lecturers. I gained engineering experience which allowed me to obtain a summer internship. I made engineering friends! Among those that were not: I was expecting to learn more about space in terms of actual study and quizzes. I anticipated a text book which would deal with elements of astrophysics, I suppose. I rather felt the title of the course was somewhat misleading. I was expecting to have significantly more time in class to work on our project (like in freshman projects) and thereby a smaller workload. Overall I really "enjoyed the course as a learning experience" and am very grateful to have chosen to enroll in it.