



ASTR 12710 1, PHSC 12710 1 - Galaxies - Instructor(s): Jeffrey McMahon

Project Title: **College Course Feedback - Winter 2024**

Number Enrolled: **81**

Number of Responses: **46**

Report Comments

Opinions expressed in these evaluations are those of students enrolled in the specific course and do not represent the University.

Creation Date: **Thursday, March 28, 2024**

What are the most important things that you learned in this course? Please reflect on the knowledge and skills you gained.

| Comments |
|--|
| How luminosity and absolute brightness can reveal distance |
| How to learn new and completely foreign material the applications of math I had never seen before the vastness of the universe |
| Galaxies and their different types; stars and their formation, death, movement, types, etc.; black holes |
| I learned about the structure and formation of galaxies and how to measure the distance to different objects in space. |
| Evidence for dark matter exists—I didn't really know what it was or how its existence was justified but I now understand how rotational velocity in the Milky Way confirms there is at least some sort of paradigm shift that's justifiable here. |
| I learned a lot about cosmology and astronomy, particularly the mathematic aspect. |
| Galaxies. The physical phenomenon that dictates the universe. Stars. Physical interactions. Theories. |
| Supernovas, redshift vs. blueshift, how to calculate distance using a variety of methods (gravitational lensing, parallax, distance modulus) |
| I learned a general introduction to lots of astronomy topics including galaxy formation, element formation, black holes, supernovas, distance calculations, and history. |
| basic stuff about galaxies and their origination |
| galactic evolution, star formation, dark matter, general relativity. |
| Black hole big and important |
| got a better understanding of galaxies |
| This class taught me about a lot of concepts in the universe, and was far more qualitative than quantitative focused. |
| Velocity curves, process of galaxy formation, star formation, HR diagram. |
| How galaxies formed, different types of galaxies that exist, what galaxies can tell use about the universe, etc. |
| I learned very interesting facts about star formation, galaxy formation and evolution, and overall spatial phenomena. |
| Star formation, Galaxy formation, parallax, how to measure distances in space, Evolution of stars. |
| how to apply what we learned in class in our labs; measuring distances in the galaxy |
| The most important takeaways I had from this course concerned the discovery and importance of such concepts as dark matter and dark energy. Additionally, I feel that the smorgasbord of astronomical concepts that we covered in this class have now equipped me with a baseline capability to read basic literature concerning new astronomical discoveries (not research papers per-se, but more so news articles from science journals that typically go more in-depth into, say, gravitational waves or recent photographs from the Hubble telescope than your usual MSNBC or CNN article). |
| We went over everything from Newton's laws to a star's lifecycle and the types of stars as well as different types of galaxies and how they form, etc. |
| <ul style="list-style-type: none"> – lifecycle of stars – basic info about galaxies – edwin hubble had a fake british accent – blackholes vs whiteholes was quite trippy |
| The overall life cycle of stars; what galaxies are and how they work; astronomical scale; rotation curves and evidence for dark matter; what the expanding universe is; basic astronomical concepts. |
| An overall understanding of the cosmos primarily regarding galaxies, galactic formation, and stellar formation. |
| 1) Despite not knowing what it is exactly, dark matter is a matter that makes up much more of the universe than regular matter 2) Understanding how to use even basic geometry and arithmetic can be very beneficial for understanding your place in the world, galaxy, and beyond 3) Mathematics in astronomy compels you to think outside the box, which is a useful life skill |
| I learnt about the evolution of stars and how to identify certain characteristics. I gained both historical and theoretical understanding on the processes, with many mathematical components allowing me to calculate and make important observations. |
| stellar formation and death, understanding different ways of calculating distance to celestial objects, types/shapes of galaxies |
| How galaxies formed and many formulas related to space such as escape velocity, and parallax. We also got to learn a lot about the history of different professors who went to UChicago which I found interesting. |
| The universe is crazy. |
| Fun background in astronomy for non-majors. Broad survey of stellar evolution, galaxies, and the universe. Some limited use of |

| Comments |
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| astronomical math, but much more conceptual. |
| History of the universe and the formation of galaxies. |
| Not a lot |
| Star formation, Galaxy formation, the concept of dark matter, calculating distances. |
| learned some calculations and about black holes |

Describe how aspects of this course (lectures, discussions, labs, assignments, etc.) contributed to your learning.

| Comments |
|---|
| Lectures were fantastic. Jeff is excited about the content and it makes you excited about the content. |
| Office Hours with the professor helped me learn more than anything else, not limited to coarse material as I learned more about math, the learning process, and the concepts of astronomy then I ever imagined I would in a science class |
| Lectures are OK, professor McMahon is all over the place sometimes. He is very passionate about his topic that I feel he gets too excited and forgets to organize his lectures. Labs were very interesting, and mostly computational. |
| The lecture helped me build a base understanding of the material and the labs and assignments helped me expand my learning. |
| lecture slides were somewhat helpful |
| Course assignments were well spaced out but they'd often be assigned quite close to the due date. |
| Lectures were great. Other assignments were tough because the questions didn't necessarily cover the material we learned in class. Labs were fun, but partners were weird. |
| The lectures were fun and the professor was very passionate about what he was teaching, the labs were not super helpful, but the assignments were the main way I learned the course material. |
| readings were easier to understand than the lectures, labs were so confusing i gained nothing from them. |
| Lectures were engaging, Professor McMahon is a wonderful speaker who is very nice, approachable and engaging. He is willing to ask any questions you may have, and very welcoming. |
| I like lecture. |
| assignments primarily contributed to my learning because I would get a better understanding of lecture material |
| Lectures are pretty important, as they are pretty much the only thing the quizzes are on, so pay attention. Just looking at the posted slides isn't enough, as a lot of important info is only said by him and not actually listed on the slides. |
| Lectures were quite useful and important for understanding material. Labs were usually a bit ahead of what was taught in class, but they were still useful for reinforcing content. PSETs were challenging at times but useful for understanding material. |
| The lectures were interesting. Homework was helpful for preparing for the quizzes. Labs seems a bit unrelated / I did not learn much in them. |
| Reviewing the PowerPoints and homework assignments before quizzes was the most helpful. |
| Lectures were great, and the online reading was incredibly helpful in detailing concepts/math. Labs were not super interesting/didn't seem to add much to the course. |
| The lectures were great but the assignments sometimes felt too hard relative to the lecture. The labs were great! |
| homework assignments and labs |
| I feel that the lectures and homework assignments contributed the most to my learning, as these were the main mediums through which course content was taught to us. Additionally, I also found the labs to be educational in terms of providing an opportunity to explore more in-depth any particular concept initially discussed in class. |
| The lectures were very useful in helping you understand. The homework assignments and practice quizzes were extremely important as they went over the things we learned in class in much more detail and put your knowledge and skills from the lectures to test. |
| <ul style="list-style-type: none"> – I didn't go to class much but Jeff was really good whenever I did. He made it really interactive and intriguing – Labs were supplementary to what we did in class – HW assignments were key to doing well on the in-class quizzes |
| Lectures were very good. It's really helpful to pay attention and take good notes during lectures as it can be hard to go back and learn things from the slides later. |
| The lectures are very very helpful and I would recommend attending as many as possible. Also the labs are fun and engaging. |
| The lectures and assignments revealed that astronomy is a field constantly faced with the unknown, but by taking first steps and |

| Comments |
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| working through it, was able to accomplish impressive feats of measurement and calculation. That same kind of thinking gave me an understanding that with difficult tasks, there is always a way to get through it. The labs would complement this, but often challenged me to think. |
| The lectures were useful in gaining knowledge, and it was useful to apply it to homework. It was also useful to apply such concepts to physical labs. |
| lecture slides and homeworks were really helpful. labs were not difficult but not as applicable. |
| It helped me better understand and appreciate how astronomers are able to calculate the distances of distant galaxies and the instruments they use to get their images. |
| Labs were nicely structured and TA's were great. |
| Labs were interesting and provided the most practical application of equations learned in class. Homeworks did not address astronomical math particularly. Lectures were well done and Professor McMahon was willing and able to answer student questions during the lectures. |
| Labs were well constructed in conjunction with lectures. |
| Labs didn't follow the sequence of what we learned in class, plus too long and unnecessary. Not a clear rubric for grading or explanation |
| Labs were helpful to grasp concepts in class. |
| I think the labs were actually a little helpful. The homework was helpful when trying to study for quizzes. |

Please respond to the following:

| | Mean | Median | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|------|--------|-------------------|----------|---------|--------|----------------|
| This course challenged me intellectually. | 4.16 | 4.00 | 0.00% | 4.65% | 11.63% | 46.51% | 37.21% |
| I understood the purpose of this course and what I was expected to gain from it. | 4.02 | 4.00 | 4.65% | 4.65% | 9.30% | 46.51% | 34.88% |
| I understood the standards for success on assignments. | 3.86 | 4.00 | 4.65% | 6.98% | 13.95% | 46.51% | 27.91% |
| Class time enhanced my ability to succeed in graded assignments. | 3.81 | 4.00 | 9.30% | 4.65% | 16.28% | 34.88% | 34.88% |
| I received feedback on my performance that helped me improve my subsequent work. | 3.72 | 4.00 | 4.65% | 6.98% | 30.23% | 27.91% | 30.23% |
| My work was evaluated fairly. | 4.19 | 4.00 | 4.65% | 0.00% | 9.30% | 44.19% | 41.86% |
| I felt respected in this class. | 4.30 | 4.00 | 2.33% | 0.00% | 6.98% | 46.51% | 44.19% |
| Overall, this was an excellent course. | 3.84 | 4.00 | 2.33% | 4.65% | 25.58% | 41.86% | 25.58% |

Additional comments about the course:

| Comments |
|---|
| Most compassionate and helpful professor I have ever had |
| While Prof. McMahon is clearly passionate and excited about his work, the lecture slides often lack structure from one slide to the next. There were a few lectures where it felt like there was no established through-line, but we were expected to still understand all of the lecture material even if the concepts could have been better arranged. |
| The lectures do not prepare you for the homework or quizzes. This class requires you to think very deeply and make logical leaps, which is not what I was expecting or desired from a core physics class. It is not intuitive in the slightest. |
| Professor McMahon is super nice! Really helped me to understand concepts in office hours. |
| It took so long to get grades back that it was hard to improve on subsequent work. |
| The four quiz format instead of midterms and finals was good. |
| Great course, would recommend to anyone who is an enthusiast of Christopher Nolan's Interstellar, and would like to obtain a foundational understanding for some of the physics in the film. It was much fun, incredibly engaging, great professor and TAs . |
| Very good |
| It was a lil tougher than expected, quizzes are not easy. |
| It's a fairly time consuming course. PSETs are pretty much due weekly and four quizzes throughout the quarter, in addition to weekly labs and a final presentation. If you put in the effort, you will do well in the class. |
| The course was unorganized, which was frustrating at times. Additionally, there are 4 quizzes 10% of your grade each. Each quiz only has 3 problems, which was stressful as your grade can do down a lot from missing one thing. |
| pretty beginner astronomy class, but still difficult for someone with no background knowledge |
| It can be a difficult course as the quizzes can be challenging but you definitely learn a lot and it is manageable. |
| It's an easy A if you don't skip class like I did. Grading scheme might look intense but it's easy to score full in every assignment basically. Don't compromise on lab. It's very scoring. |
| Homework assignments are very ambiguous and often cover things not really dealt with in class. Even my TA was often unsure what Professor McMahon meant by some questions. That made for a more stressful than necessary experience. Another thing to keep in mind is that it repeats a very significant amount of content from the Stars course; if you've taken that, some 40% of the content will be review-adjacent. Professor McMahon should definitely consider how much time he spends on that content. Otherwise it's not too difficult and pretty interesting! |
| N/A |
| This was an extremely fun course and I think that professor McMahon made lectures engaging |
| N/A |
| It was fine, not significantly hard for someone who sucks at math, but Prof is pretty helpful in meeting with you and helping out if you bomb a quiz or something. |

I would recommend this course to:

| | No | Yes |
|---|--------|--------|
| Highly-motivated and well-prepared students | 4.76% | 95.24% |
| Anyone interested in the topic | 21.43% | 78.57% |

Thinking about your time in the class, what aspect of the instructor's teaching contributed most to your learning?

| Comments |
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| When he would walkthrough math problems on the whiteboard |
| ability to simplify subject matter and create applicable analogies allowing student of any level to digest coarse material. |
| His understanding of his own field made it easier for me to also understand it |
| His ability to explain complex ideas and concepts in simple, understandable language. And he also always asked if we had questions to make sure we were understanding the material. |
| Passion and historical background—I appreciated how Prof. McMahon acknowledged science was a social endeavor, and he provided a lot of history to keep things interesting/memorable. |
| He explains things in a way that's really easy to understand, and was always willing to explain more. |

| Comments |
|---|
| The way he lectures was great. |
| Class was lecture only, so the lectures were the biggest part. These were somewhat helpful, but could have been improved by more demonstrations on how to use the given equations and formulas in context. |
| The professor was very passionate and enthusiastic about what he was teaching and that made learning the material more interesting. |
| nothing lowkey |
| His knowledge and background and overall passion towards the subject matter. It was contagious and his excitement made you excited... especfcailly with. the wonders of newer astronomical and cosmological discoveries. |
| The lectures were pretty good. The quizzes were difficult. |
| lectures |
| He was very fun to learn from and had a nice energy. |
| Lectures and PSETs contributed the most to my learning. |
| The lectures were engaging. |
| Homeworks |
| Homework assignments were the most helpful. |
| Lectures were awesome and Professor McMahon is genuinely so nice and interested in the topic and clearly loves to teach |
| I loved how Professor Mahone would go off explaining quantum mechanics. |
| the examples he did on the board; copy those down and study it |
| I feel that the instructor's willingness to answer questions (either mid-lecture or near the end of lectures) concerning course content contributed the most to my learning. |
| Professor McMahon's passion for the subject really helps in keeping students engaged. It made me want to learn more about what he was teaching and made him very approachable to ask questions or get help if needed. |
| Jeff is one of the best instructors I have had. Made class very interactive. I enjoyed his way of teaching. His slides were good. |
| Lectures were great! Very well done and engaging. I appreciated the professor's efforts to try to keep people involved and excited. Definitely the highlights of the course were when he answered open-ended questions about astronomy — it was really interesting! |
| Professor McMahon does a great job of explaining content material using real life examples and context. Yet he always brings back home your major points of the lecture. |
| Whenever the professor would apply an equation to an example/work out on example on the board, they made it much easier for me to understand how to use the mathematics in my own work. |
| The enthusiasm in lectures and slides that made topics very clear. |
| professor was really clear while lecturing, good at explaining concepts |
| I really enjoyed Professor McMahon's answers to our galaxies-related questions. These topics may not be on any homework or quizzes but to me it showed how curious students were in the class and how eager Prof McMahon was to share his knowledge. |
| The passion for astronomy was there. |
| Lectures, effective explanation of conceptually difficult problems in astronomy. |
| Lecture slides and presentations. |
| His enthusiasm but just having that isn't enough to get a whole class to engage. |
| Professor McMahon was very enthusiastic about the subject which made learning it very fun. I loved going to class. |
| I think the lectures could sometimes have info we didn't need since Prof would go on tangents that weren't directly related to the quizzes or homework. But, I think the lectures were fine and did help when trying to do the homework. |

What could the instructor modify to help you learn more?

| Comments |
|--|
| Release the answer key to the practice quizzes |
| TA's could grade slightly more liberally on HW, Labs, Quizzes |
| Maybe not using Google slides that look like my presentations from middle school (sorry Prof), I think having more formally made lecture notes would have made it easier to review for quizzes when needed. The slides were honestly all over the place, and made it harder to see the flow of the course. |
| NA |
| Mostly just polishing the lecture slides—many times concepts were talked about as if they had been already covered when they really weren't. |
| N/A |
| Actually focus on more of the math we are supposed to use on homework and quizzes. Would be helpful if you walked through some questions similar to the ones you would put on the quizzes. |
| Professor and TA's were all horrible at replying to email. I have emailed one of the TA's who is supposed to grade an assignment, and she has not replied for 14 days, despite my repeated emails. McMahon was somewhat better, but classmates and I have also had trouble getting in touch with him over email. |
| The professor could have changed a couple of the labs to be more relevant or hands on. |
| organize the lectures better, sometimes i thought it felt like listening to someone ramble |
| More time available for extra help. |
| The homework was very challenging |
| n/a |
| Perhaps having all of the info from his lectures listed on his slides would be helpful when you are studying for the quizzes. |
| Consider making the standards for success on each quiz a little more clear. Although it was stated that the quizzes would be based on the homework, there was almost always material that wasn't on the homework that was on the quiz. Consider telling students what lectures to review for the quizzes as opposed to homework, as that seems more relevant. |
| Make the course schedule / expectations more clear. The homework due dates, what each quiz covers, etc. were sometimes very vague. |
| Lecture slides were sometimes unclear when reviewed later. Lectures sometimes went into too much detail that was beyond the scope of the class. |
| Going over the math that appears in the homework/on the quizzes more in class would be great |
| Answer the questions of all students because many times I would raise my hand and he would ignore me for the entire lecture. |
| providing practice quiz answers so we can enhance learning for in person quizzes |
| I feel the instructor could improve the course by slightly narrowing the focus of most lectures so that we could dedicate the proper amount of time to deal with the more complex topics covered in the course. While the smorgasbord approach certainly has its numerous benefits, I do feel like certain concepts as it pertains to quantum mechanics or general relativity were not given a sufficient amount of time given their complexity due to the fact that we simply always had so much more other content to cover. |
| Maybe make sure that there are practice quizzes that are similar to the quiz before each quiz as they not only helped me prepare but also made me feel better about the quizzes overall. |
| All good sir. No change needed. Jeff is a G |
| The worst part of the class was the assignments. They were extremely confusing and frequently covered stuff we didn't really go over in class. Even proofreading them and going over them once or twice to make sure they were OK for students would have been helpful. TAs often didn't really know how to answer questions on them, and it forced me to go to office hours to try to figure out problems that shouldn't have been that hard each week. He also put some stuff on one of the quizzes that he did not say he was going to include. |
| Sometimes the professor, given his knowledge, would go over mathematical assumptions that I would not have known, had I not asked him for clarification later. |
| Maybe go through homework questions in class to improve understanding further. |
| I think adding a little bit more notes on the lecture slides would be helpful for when we come to use them to study for quizzes. |
| The instructor could dive deeper into some of the concepts, hard to find resources outside of class to review concepts further. |
| Make it more interesting rather than it seeming like a history class. |
| n/a |
| I think the lectures could feature more on the board work on how to do certain math problems. |

The Instructor . . .

| | Mean | Median | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | N/A |
|--|------|--------|-------------------|----------|---------|--------|----------------|-------|
| Organized the course clearly. | 3.75 | 4.00 | 0.00% | 15.91% | 15.91% | 45.45% | 22.73% | 0.00% |
| Presented lectures that enhanced your understanding. | 3.93 | 4.00 | 2.27% | 9.09% | 15.91% | 38.64% | 34.09% | 0.00% |
| Facilitated discussions that were engaging and useful. | 3.80 | 4.00 | 0.00% | 11.36% | 20.45% | 36.36% | 25.00% | 6.82% |
| Stimulated your interest in the core ideas of the course. | 4.18 | 4.00 | 0.00% | 6.82% | 9.09% | 43.18% | 40.91% | 0.00% |
| Challenged you to learn. | 4.18 | 4.00 | 0.00% | 2.27% | 13.64% | 47.73% | 36.36% | 0.00% |
| Helped you gain significant learning from the course content. | 4.16 | 4.00 | 0.00% | 4.65% | 11.63% | 46.51% | 37.21% | 0.00% |
| Was available and helpful outside of class. | 3.98 | 4.00 | 2.33% | 4.65% | 20.93% | 34.88% | 34.88% | 2.33% |
| Motivated you to think independently. | 4.09 | 4.00 | 0.00% | 4.55% | 18.18% | 38.64% | 36.36% | 2.27% |
| Worked to create an inclusive and welcoming learning environment. | 4.42 | 5.00 | 0.00% | 2.27% | 4.55% | 40.91% | 50.00% | 2.27% |
| Overall, this instructor made a significant contribution to your learning. | 4.26 | 4.00 | 0.00% | 4.55% | 11.36% | 36.36% | 45.45% | 2.27% |

Please include the name of the TA/CA/Intern you are evaluating. What aspects of the TA's teaching contributed most to your learning? What could the TA modify to help you learn more? Please include any additional feedback for the TA/CA/Intern.

| Comments |
|--|
| Daisy. |
| Daisey |
| Daniel Glazer. He was very helpful in labs, and was really friendly with the students during lab sessions. Never judged anyone for not understanding and always tried his best to help. |
| Sam Usman — She was incredibly helpful to my learning. She always encouraged us to ask questions, and explained clearly when someone was confused. |
| Daniel Glazer—maybe just talk a little slower. |
| Sam Usman |
| She was very helpful when I had questions about labs and homework. |
| Sam Ulsman |
| Daniel Glazer |
| Samantha Usman. Was always helpful and available. Helped facilitate lab and was helpful during office hours. |
| sam was the only highlight of this class. she was always available for questions outside of class and always responded to emails promptly |
| Mckenzie Ferrari. Available and provided quality assistance for reinforcing course concepts . |
| Samantha Usman |
| Daniel Glazer |
| Daisy. She was very helpful and gave clear feedback. |
| Daisy, she was extremely kind and helpful. Always helped students during lab sections and was very approachable during office hours. |
| Sam. She was great! |
| Samantha Usman. Graded unnecessarily hard at times, but was probably the most available and knowledgeable TA out of the four them. But very helpful when I emailed her several times towards the end of the course. Willing to help. |
| Daisy Bissonette |

| Comments |
|--|
| Daniel was great at answering questions on the labs and was engaging in explaining concepts |
| Mckenzie Ferrari |
| Mckenzie Ferrari — her time to look over rough drafts and answers all questions in lab. Lenient on grading to punish for improvement. |
| Samantha Usman. Sam was incredibly helpful throughout the course. She held office hours weekly and was prompt to answer emails and questions. I felt good asking her questions if needed and overall really helped me feel better about this course, especially when I was struggling. |
| McKenzie Ferrari Sweetest TA ever. She explained things pretty well and helped resolve last minute HW queries too which was very helpful. W McKenzie |
| Daisy Bissonette |
| McKenzie Ferrari was our TA and she did a wonderful job helping us with the lab material. She's super great at getting back with you promptly and is nearly always available to help. |
| Daisy Bissonette. They were very helpful whenever I needed clarification on assignments during or after office hours. They would provide examples and visualizations of how the equations worked, which made it easier for me to comprehend what I was supposed to do on my work. |
| The TA helped for the labs and was useful in explaining topics, however he was not able to always comment on our work which made it tricky at times. |
| Samantha Usman |
| Daisy Bissonette |
| Makenzie Ferrari |
| Samantha Usman – TA was effective at leading lab sections, interested in helping students complete their labs, good at explaining labs and concepts. |
| Daniel Glazer was a great TA and lab facilitator. He was always there to answer any questions related to lab and HW, and helped me personally a lot through my final project. |
| Daisy Bissonete |
| Mckenzie is a very kind and intelligent person. She was incredibly understanding and helpful when questions were brought up. |
| Daisy |

The TA/CA or Intern. . .

| | Mean | Median | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | N/A |
|--|------|--------|-------------------|----------|---------|--------|----------------|-------|
| Facilitated discussions that supported your learning. | 4.26 | 4.00 | 0.00% | 5.00% | 7.50% | 40.00% | 42.50% | 5.00% |
| Gave you useful feedback on your work. | 4.45 | 5.00 | 0.00% | 5.00% | 5.00% | 30.00% | 60.00% | 0.00% |
| Stimulated your interest in the core ideas of the class. | 4.18 | 4.00 | 0.00% | 5.00% | 12.50% | 42.50% | 40.00% | 0.00% |
| Challenged you to learn. | 4.28 | 4.50 | 0.00% | 5.00% | 12.50% | 32.50% | 50.00% | 0.00% |
| Helped you succeed in the class. | 4.33 | 5.00 | 2.50% | 5.00% | 5.00% | 32.50% | 55.00% | 0.00% |
| Was available and helpful outside of class. | 4.33 | 5.00 | 2.50% | 2.50% | 10.00% | 30.00% | 55.00% | 0.00% |
| Overall, this individual made a significant contribution to your learning. | 4.38 | 5.00 | 2.56% | 5.13% | 2.56% | 30.77% | 58.97% | 0.00% |

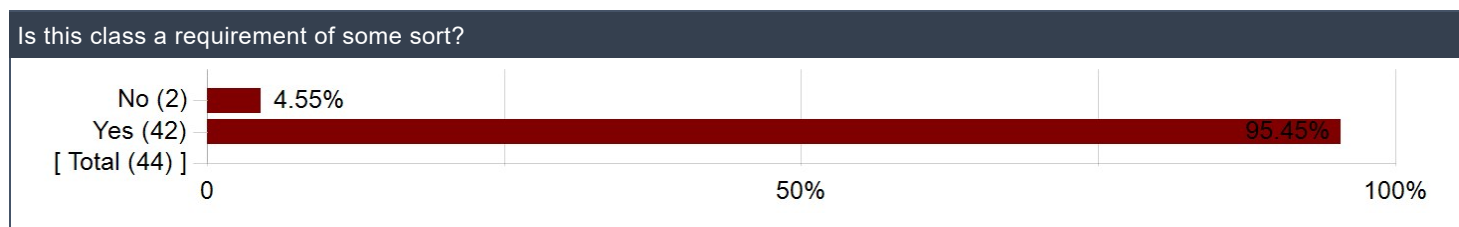
How much did the following elements of the course contribute to your learning gains?

| | Mean | Median | No Gain | A Little Gain | Moderate Gain | Good Gain | Great Gain | N/A |
|-----------------------|------|--------|---------|---------------|---------------|-----------|------------|--------|
| Laboratory Experience | 3.64 | 4.00 | 4.76% | 16.67% | 11.90% | 42.86% | 23.81% | 0.00% |
| Field Trips | 2.00 | 1.50 | 5.56% | 2.78% | 0.00% | 2.78% | 0.00% | 88.89% |
| Library Sessions | 2.00 | 1.50 | 5.56% | 2.78% | 0.00% | 2.78% | 0.00% | 88.89% |
| Review Sessions | 2.40 | 2.00 | 5.56% | 2.78% | 0.00% | 5.56% | 0.00% | 86.11% |
| Writing Seminars | 2.00 | 1.50 | 5.56% | 2.78% | 0.00% | 2.78% | 0.00% | 88.89% |

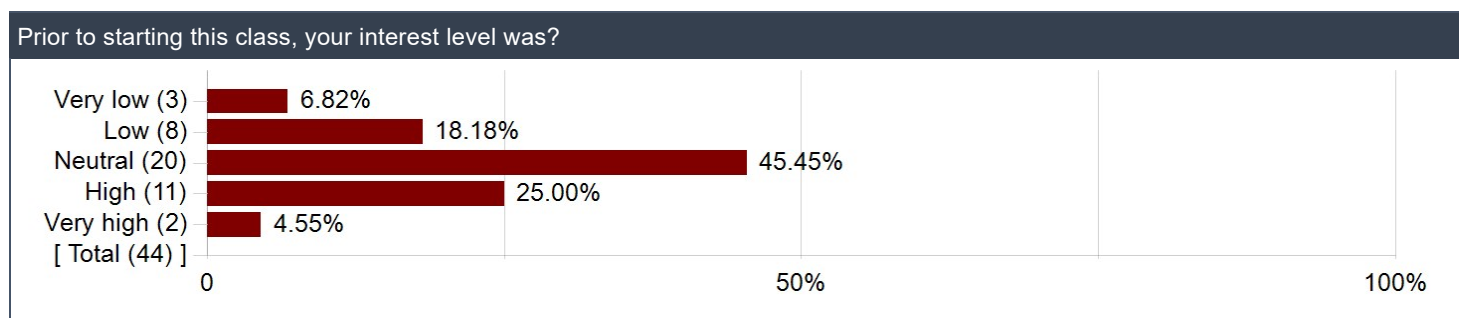
Other course elements not mentioned above:

| Comments |
|----------|
| n/a |
| N/A |

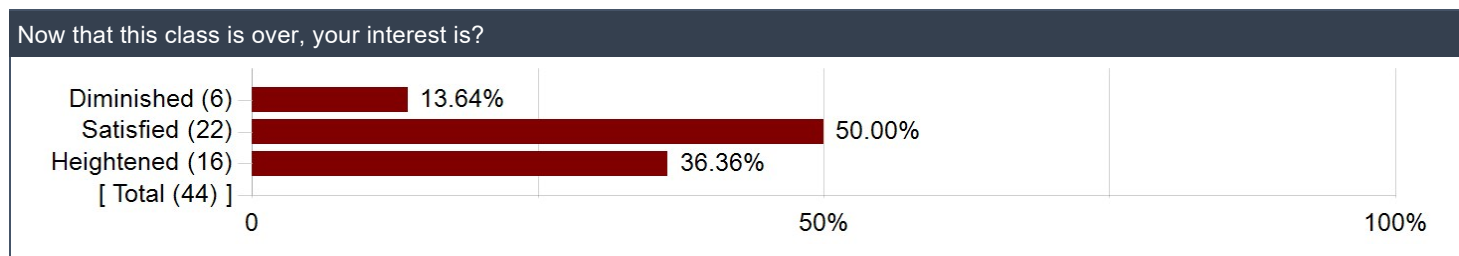
Is this class a requirement of some sort?



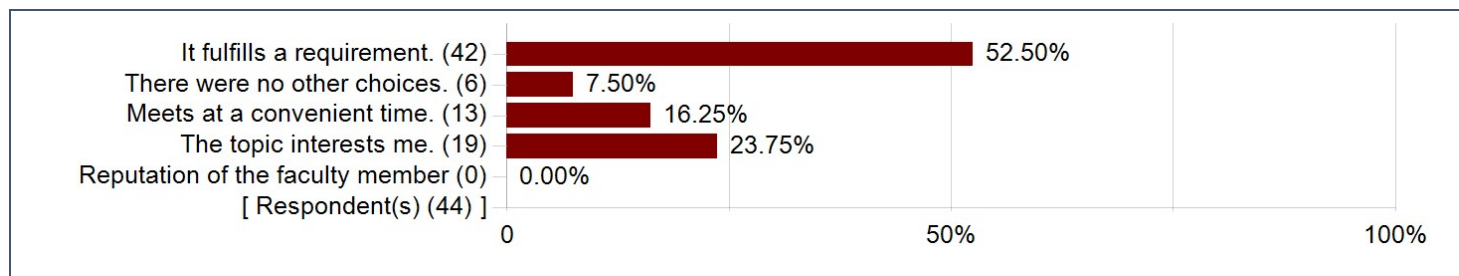
Prior to starting this class, your interest level was?



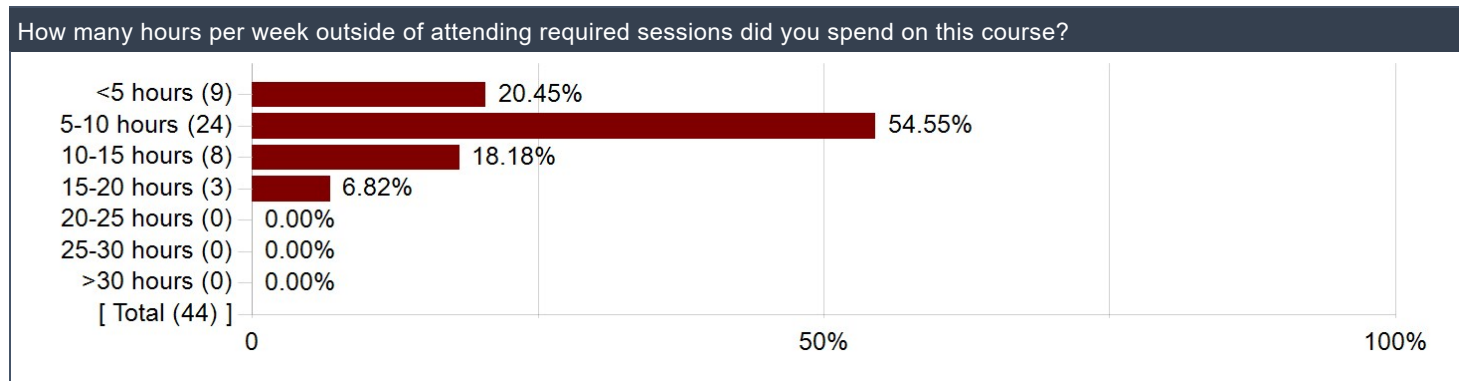
Now that this class is over, your interest is?



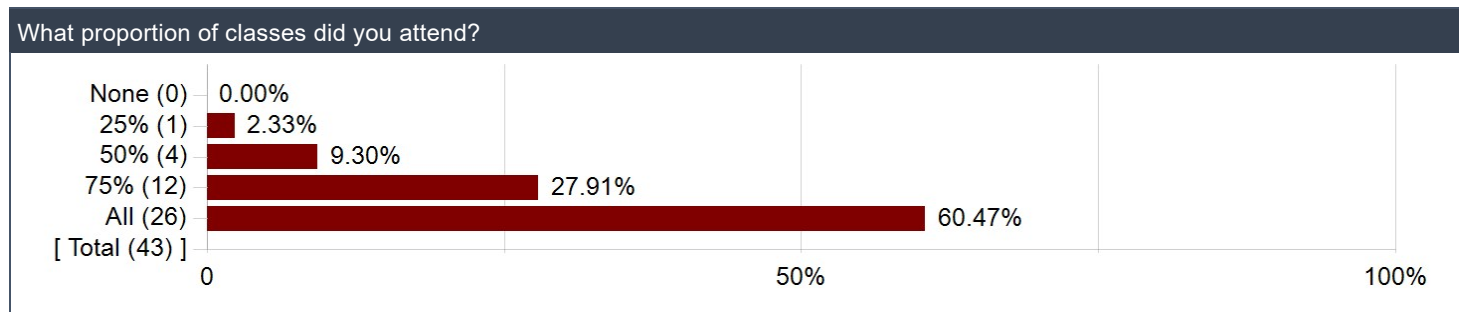
Why did you choose to take this course? (Select all that apply)



How many hours per week outside of attending required sessions did you spend on this course?



What proportion of classes did you attend?



Please comment on the level of difficulty of the course relative to your background and experience.

| Comments |
|--|
| I'm not a STEM person and found this course to not be too difficult. Jeff knows that most of us aren't STEM students and teaches accordingly. If you just pay moderate attention in class, do the homework, and do the practice quizzes you will do fine. He doesn't try to trick you or stump you. I found that all the work he assigned was necessary and not busy work. Everything served a purpose. It wasn't too difficult or too easy, it was the perfect balance. |
| Semi challenging |
| Neutral. Not too hard or easy, I switched from PHYS 13200 after doing 13100 the quarter before. |
| This course felt challenging but not too difficult and I had no previous experience with the material. |
| It's fine |
| Incredibly difficult |
| Wasn't too difficult. It was easier to understand than stars, which I took the previous quarter |
| No prior background, some parts of the lecture, the lab, and the homework may be challenging (need me to listen closer or search for more online), but quizzes were not hard if you checked the practice quiz beforehand. Overall a good course to take if astronomy does not bore you. |
| Have no physics background, so I expected this to be somewhat easy as a core requirement class. It was difficult for me, but others with physics backgrounds might fare better. |
| Pretty difficult. I don't have much background in any math or physics. |
| It was maybe a 6/10 difficulty, definitely manageable but not a breeze. |
| The course was relatively ok given that I have a background in math, but to anyone that doesn't want a numerical course, this would probably not be the one to take. |
| Lectures sometimes feel very challenging but all assignments, quizzes, and labs are very manageable. Great for non-STEM majors. |
| If you are just trying to fulfill the core and you don't like math/science, do not take this class. It seemed like an objectively awesome and interesting class and Professor McMahon was amazing, but I found it incredibly difficult (as someone with little interest/experience in science) and struggled on the quizzes and had to spend an unreasonable amount of time on the homework |
| The course was really easy especially if you had taken MEST before. |
| pretty difficult to grasp concepts, but quizzes are built around homework so the course was manageable |
| I found this course's level of difficulty to be a bit of a step up compared to "Earth as a Planet", the first course I took for my Physical Sciences Core requirement. Still, I was able to quickly gain a grip on the course content and difficulty level after a short adjustment period. |
| Some background on stars or galaxies overall would definitely be useful, but isn't necessary. |
| I'd say easy for a finance major. Class just has basic historical science, a little bit of actual math, logical understanding and rote learning. |
| It wasn't too bad except for the confusing homework assignments. |
| It had been about a year since I had a mathematically involved class, and even longer since I had geometry class. I was eventually able to remember how such equations worked, but it was initially difficult to understand given new terminology in astronomy that I had not seen before. However, I worked hard to adapt to the course and was able to better understand the material. |
| I had completed MEST before this and while there was some overlap a lot of the material was new. I have also completed calculus which made the math presented in class relatively easy. |
| Not difficult – math is largely formula based, conceptually difficult without attending lectures. |
| A little difficult but very learnable. |
| I am really bad at math, and I thought that this math on the homework and quizzes was easier than MEST. I also think the TA's and Prof were helpful in guiding you through hw and helping you during OH. |