

Syllabus — AST1001

Course Information

AST1001: Exploring the Universe, Fall 2025, 4 crs

Tues, Thurs, 2:30PM-3:45PM Tate B20

Prof. Claudia Scarlata

Email: mscarlat@umn.edu

Office Hours: by appointment

Location: Tate 285-08

TA Office Hours available [here](#), in Tate 510-02*

*To reach Tate 510-02, take the elevator to the 4th floor and follow signs for the Observatory Dome

Course Description/Goals

AST 1001 covers a wide range of topics in astronomy, from the fundamental principles of physics to our understanding of the Solar System and the universe as a whole. The primary goals of this class are to apply this knowledge to gain a perspective on our planet and its place in the cosmos and to arm students with the scientific literacy that is increasingly essential in our changing world. AST 1001 satisfies Liberal Education Physical Science w/Lab and the Environmental Theme requirement.

Required Text

- The Essential Cosmic Perspective, Bennett, Donahue, Schneider and Voit – Ninth Edition with access to Mastering Astronomy* *The ninth edition is required to access Mastering Astronomy.

Important Dates

Midterm 1: Tuesday, October 7th, during class time. **Last names A-L in TBD, last names M-Z in TBD**

Midterm 2: Thursday, November 6th, during class time. **Last names A-L in TBD, last names M-Z in TBD**

Final Exam: Thursday, December 18, 10:30 a.m. to 12:30 p.m. Room TBD

What to Bring to Lecture

- Recommended, but not required: My lecture slides - either printed to write on, or you can use a computer to mark on them.

What you do NOT need to bring:

- Textbook
- Computer or tablet (unless you want to use it for notes)

How to succeed in this course

- Attend every lecture. Failure to do so can result in falling behind and missing material for exams. If you do miss a lecture, make sure to go over old slides online. You can access copies of the powerpoint slides for the lectures under the "Files" tab to the left on this site. Surveys of past students have indicated that attending the lectures was highly recommended for keeping up with the course.

- Attend every lab. The points you earn in lab are worth a large fraction of your grade. Additionally, you need to earn at least a 70% in lab or you will autofail the class. The lab activities supplement the material learned in lecture and reinforce learning with hands-on experiences. Material covered in lab can appear in exam questions.

- Read the book before lecture. At the end of the semester, students are asked what they could have done to improve their learning and this is by far the most common answer. If students keep up with the reading, the pace of the class is more manageable. If not, students can fall behind and can have difficulty catching back up.

- Collaborate with those around you. Whether on conceptual questions in class, work in lab, or homeworks, having others to bounce ideas off of can be invaluable. Introduce yourself to those around you and make study groups. Just make sure to turn in your own work.

- Come to office hours if you are struggling. It is normal to find this material difficult! Your lab instructor has office hours for the express purpose of helping answer questions students have about confusing material or clearing up misconceptions. You can go to any Ast 1001 TA's office hour. Often office hours are an underused resource. Stop by!

- Prepare for the exams by taking the on-line quizzes. Use the quizzes in Mastering Astronomy to test your knowledge of the material covered in the individual chapters. Former Ast 1001 students have said that this is the best way to prepare for the exams.

• Give feedback. Are we going too slow? Too fast? Could I do better at clearing up a point? It's difficult to fix these kinds of problems if I don't know about them, so talk to me about it and I'll do my best to remedy the situation when such a problem arises.

Mastering Astronomy / Textbook information

For lecture, the following are required: (*a separate lab manual is required for lab*)

- Electronic access to online Mastering Astronomy exercises AND
- The Essential Cosmic Perspective, Version 9, either
 - B1. electronic or
 - B2. print or
 - B3. both.

You can set up access to both the electronic textbook and the online Mastering Astronomy exercises through Courseworks. Course Works is a link located in the Canvas navigation bar (on the far left), and you can set up access by clicking on it. Instructions are available [HERE](#).

I recommend obtaining the course materials through Course Works. If you have declined Course Works, you should be able to purchase access through Pearson via the "Access Pearson" link on the course navigation bar to the left

Troubleshooting

Please contact tech support <https://support.pearson.com/getsupport/s/contactsupport> or try some of the generic fixes below first.

Most login issues will clear up once you follow all of these steps.

1. Log out of all open applications on the computer you are using (Moodle, any Pearson accounts, etc). Don't just close the applications, but make sure you are fully logged out first.
2. Restart your computer.
3. Select a browser below to delete cached files (a.k.a., clear your cache) and cookies.
4. Update your browser settings. Note that Chrome and Firefox are the recommended browsers for all Pearson Products.
5. Turn off pop up blockers.

For help with Mastering Astronomy from Pearson, go to [Pearson Support](#)

Astronomy 1001 Lab

Lab Schedule, Instructor Contact Info, Office hours

The lab portion of AST1001 is designed to introduce students to the observational and analytical techniques used by astronomers. The lab will reinforce the physical concepts taught in the lecture portion of the class as well as challenge students to apply what they've learned to a number of issues related to how we as a society interact with our environment here on Earth.

As a result of this lab, students will be able to:

- Apply observational and analytical techniques used by astronomers to situations in a laboratory setting
- Discuss the factors related to our society's relationship with the Earth/environment
- Solve simple mathematical problems related to data and physical processes
- Demonstrate the ability to think critically about physical phenomena
- Develop their ability to work cohesively in a group

Grades

Your grade is out of 1000 points. A breakdown is in the table below and each section is described. There is no extra credit available. If the number of assignments given would exceed the total points for any reason - the lowest scores will be dropped from that category. While I will determine letter grades (with + and -) at the end of the semester, I expect to use a typical grade distribution: A = 900-1000, B = 800-899, C = 700-799, D = 600-699, F = 0-599. I will not make it "harder" to get a grade based on these points, eg: if you have 900 points, you will receive at least an A-.

NOTE! In order to receive a passing grade in the course you must earn at least 70% of the total available lab points.

You must receive a 'C-' or better to receive a grade of 'S'

Points	Category	Notes
440	Labs	40 ea, drop 1
100	Reading Quiz(es)	
300	Midterms	150 ea
160	Final Exam	
1000	Total	

Midterm and Final Exams (560 points) - There are 3 scheduled exams for this course: two (2) midterm exams worth 150 points each and one (1) final exam worth 160 points. The two **midterm exams are on October 7 and November 6 during class time, Room TBD**, during normal lecture time.

The **final exam is December 18 at 10:30 a.m.** The room assignments for all exams will be announced in class and posted to Canvas at least a day before the exam (likely sooner...). All exams are multiple choice. Each midterm exam will cover the content as defined on the schedule. 20 percent of the questions on the second midterm will come from the first midterm, and 20 percent of the questions on the final exam will come from the second midterm. Exam questions will be drawn from a test question database provided by the publisher of the text. The best way to study for these exams is to use the on-line chapter test available in Mastering Astronomy. Students will have the class period (about 75 minutes) to finish the midterm exams, though, experience shows that most students will be done before time expires.

Labs (440 points) - Please attend the lab section that you have registered for. There will be 12 labs that will take place IN PERSON in your assigned Lab Room in Tate Hall. You **must** attend every lab. Each lab is worth 40 points with the worst lab score dropped. This dropped lab is meant to give some breathing room in case of illness or unexcused absences, for whatever reason. The points you earn in lab are worth a large fraction of your grade. **Additionally, you need to earn at least a 70% in lab or you will autofail the class.** The lab activities supplement the material learned in lecture and reinforce learning with hands-on experiences. Material covered in lab can appear in exam questions. During each lab, students will be divided into groups of 3-4 lab partners and will work with those partners on the lab exercises. Lab work will consist of three parts: (1) reading the lab introduction for each lab prior to lab; (2) completing the pre-lab activity worksheet and submitting by deadline prior to lab (5 points out of the 40 total per lab); and (3) during lab, completing the lab answer sheet in collaboration with your lab group (the remaining 35 points out of the 40 total per lab). Towards the end of the semester, a few make-up Lab sessions will be offered and scheduled by the TAs for those students who had to miss a lab for legitimate reasons. One of the make-up labs will be the option of going to the Bell Museum; instructions for attending the Bell Museum will be posted by the TAs. Further details about the Lab expectations and policies are provided below and on the Canvas site under Lab Syllabus.

Reading Quizzes: This is a fast-paced course and an essential way to stay on top of the material is to keep up with reading. In addition, lectures may not be able to cover all aspects of the material. Since reading is then a key component of your learning we will have Graded Weekly Reading Quizzes as a Canvas assignment available through the weekly module on the Canvas Course page. The assignment will open on Tuesday morning 8am; close midnight

Monday the following week. Questions will be on the material covered in the reading for that week (even if its not necessarily covered in lecture).

Total of 100 points over the semester: The first week is practice and does not count. Each reading quiz will count for 10 points total possible for the remaining weeks, EXCEPT 5 points total for weeks with only one lecture (Midterms 1 and 2, Thanksgiving and last week of class). The worst two of your 10-pt possible weeks will be dropped. So that's 8 weeks X 10 points + 4 weeks x 5 points for a total of 100, or 10% of your grade (the difference between an A and a B!). You will be scored on the fraction of questions you answer CORRECTLY.

In Class Questions (ICQs): During each lecture, several In Class Questions will be given to help assess understanding of the material. Even though these will not be graded, they are an important part of your learning process. In answering these questions, we will use colored ABC cards that will be distributed in class during the first few weeks of lecture. Please make sure to bring your ABC card to lecture; do not rely on there being extras. A PDF of the ABC card is provided on the Canvas site in the syllabus section- if you misplace yours you can print another one.

Homework: The homework assignments will be made through Mastering Astronomy and will be assigned weekly. While the assignments are not graded or a part of your grade in any way, it is important that you complete them. They are for practice and to help you gain mastery of the material. It is very likely that questions from the homework will appear on exams.

Exam information

Exam Policies

Examinations Room assignments for the exams will be announced in class and posted online. Bring two pencils and a photo-ID to all exams. If you cannot attend an exam for a legitimate reason (illness, loss in the family, etc.) and you know about it beforehand, contact me and we can schedule a make-up exam. Students attempting to schedule a make-up exam after the fact should contact me as soon as possible (except in extraordinary circumstances). You can pick up your final exam after grades are posted by either contacting me privately or picking it up during the spring semester. If you feel there is a mistake on your exam, please see me- you must bring with you your returned multiple choice questions, with your answers indicated.

Special Exam Room All Midterm Exams will be given during normal class time in a room to be assigned.

Note Sheet Students are allowed to bring a single sheet of paper (8.5 x 11 inches) with notes on one side to each of the midterms and a single sheet of paper (8.5 x 11 inches) with notes on both sides to the final exam.

Midterm Exam Content Each midterm will cover about 5 weeks of material as outlined on the schedule and detailed during class. Midterm exams will be entirely multiple choice, and will consist of 45 questions. Exam questions will be drawn from the test bank provided by the book publisher. 20 percent of the questions on the second midterm will come from the first midterm exam. Students will have the class period (about 75 minutes) to finish the exam, though, I plan for most students to be done earlier.

Final Exam Content The final exam will be entirely multiple choice, and will consist of 50 questions. 20 percent of the questions on the final exam will come from the second midterm.

University Policies

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

University COVID-19 Policies

You can find information on the University's Safe Campus policies and actions here [COVID return to campus](#). University policy on face coverings during COVID-19 is here [COVID return to campus-face coverings](#). You can find more information on the return to campus and answers to many questions about University policy applying to students around COVID-19 at *Student FAQ's*. To review those FAQ's, please see: [COVID-student FAQ's](#).

Student Code of Conduct

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf.

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how

personal electronic devices are allowed to be used in the classroom. For complete information, please reference: <http://policy.umn.edu/education/studentresp>.

Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct

Code: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf

) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/education/instructorresp>.

The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-....> If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: <http://policy.umn.edu/education/makeupwork>.

Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective

learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <http://policy.umn.edu/education/studentresp>.

Grading and Transcripts

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

A	4.000 - Represents achievement that is outstanding relative to the level necessary to meet course requirements
A-	3.667
B+	3.333
B	3.000 - Represents achievement that is significantly above the level necessary to meet course requirements
B-	2.667
C+	2.333
C	2.000 - Represents achievement that meets the course requirements in every respect
C-	1.667
D+	1.333
D	1.000 - Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
S	Represents achievement that is satisfactory, which is equivalent to a C- or better.

For additional information, please refer to: <http://policy.umn.edu/education/gradingtranscripts>.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents

Policy: https://regents.umn.edu/sites/regents.umn.edu/files/policies/Sexual_Harassment_Sexual_Assault_Stalking_Relationship_Violence.pdf

Equity, Diversity, Equal Opportunity, and Affirmative Action

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents

Policy: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf.

Disability Accommodations

The University of Minnesota views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Twin Cities - [612.626.1333](tel:612.626.1333)) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, **can** often work with instructors to **minimize** classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact your (access consultant/disability specialist).

Additional information is available on the DRC website: (UM Crookston

- <https://www.crk.umn.edu/units/disability-resource-center>, UM Duluth

- <http://www.d.umn.edu/disability-resources>, UM Morris -

<http://www.morris.umn.edu/academicsuccess/disability/>, UM Rochester -

<http://r.umn.edu/student-life/student-services/disability-resources>, UM Twin Cities

- <https://diversity.umn.edu/disability/>) or e-mail (UM Crookston - myers062@crk.umn.edu,

UM Duluth - access@d.umn.edu, UM Morris - hoekstra@morris.umn.edu, UM Rochester

- sdzavada@r.umn.edu, UM Twin Cities - drc@umn.edu) with questions.

Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in

daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

Academic Freedom and Responsibility

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost. *[Customize with names and contact information as appropriate for the course/college/campus.]*

** Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*

FAQs

Q: Are there Labs during the first week of classes?

A: No. Teaching the Labs starts during the second week of classes.

Q: What advice do previous students have for doing well in this course?

A: Every semester all students are asked "what could you have done to improve your performance in this class." The overwhelming majority of students answer: "Attend more lectures and read the textbook." In addition, students find that taking the on-line quizzes in Mastering Astronomy is very helpful in preparing for the exams. Be sure to attend all of the Labs.

Q: What if I miss a lecture? The slides go by too fast for me to write everything down.

A: All of the powerpoint slides for my lectures are posted on the course Canvas website, so you can look at those slides to see what was presented in the lecture that you missed. Since

the slides are available, there is no need to take notes (although many students find that taking some notes is very helpful for remembering material). The powerpoint slides are also available in .pdf form which is convenient for taking notes. The slides are generally available the day before the lecture.

Q: I think that the lectures are going too fast.

A: Studies have shown that when students read the textbook before the corresponding lecture, the feelings that the lecturer is going too fast are greatly reduced.

Q: I am having trouble accessing the online version of the book Mastering Astronomy/Essential Cosmic Perspective, what should I do?

A: Contact the publisher's technical support at: <https://support.pearson.com/getsupport/s/>

Q: What do I do if I can't make it to my assigned lab?

A: Contact your lab instructor as quickly as possible. If you have advanced notice, you can usually arrange to take the lab with a different section during the same week. (We change the lab set-ups each week, so it is important to get to a different lab section that week.) If this is not possible, discuss options with your lab instructor. Letting your lab instructor know as soon as possible is critical. By all means try not to miss a lab. Missing a lab is equivalent to getting ~7 questions wrong on a midterm exam. (although, if you only miss one lab during the semester, the lowest lab grade is dropped so you have some leeway).

Q: Are there going to be assignments given on Mastering Astronomy?

A: No, there will be no assignments given or graded on Mastering Astronomy. Mastering Astronomy is provided as an ancillary learning tool. In particular, the online quizzes are excellent guides to judge your comprehension of the reading and for preparation for the exams.

Q: Where are the online quizzes?

A: The online quizzes can be found in Mastering Astronomy in the "study area".

Q: Where are the exams given?

A: The midterm exams are given during class hours, the final exams are given at a University designated time. Because the classroom is full, the exams are normally given in either a very large lecture hall or split into different rooms in order that there be space between students during the exam. These exam room assignments will be (1) announced in the lecture, (2)

written in the lecture powerpoint presentations, and (3) provided on the course canvas website.

Q: What do I do if I can't make it to an exam?

A: Contact Professor Kelly as soon as possible. If he is notified well in advance, he may be able to arrange for an alternative. Regardless, notify Professor Kelly as soon as possible.

Q: Are the midterms graded on a curve?

A: For each exam and lab, you are given a certain number of points (see syllabus). At the end of the course, these points are all added up and you are assigned a grade (see syllabus for approximate grade breakdown). Thus, there is no assignment of grades for each midterm or lab.

Q: How can I find out my exam and lab scores?

A: Once they have been graded, the exam and lab scores will be posted on the course canvas page.

Q: All of my assignments are given points, not grades. How can I estimate my grade in the course?

A: Add up all of your grades, divide by the total available, and compare to the preliminary grade distribution given in your syllabus.

Q: Where do the TAs hold their office hours? Can I go to any TA office hour or only my lab TA's office hour?

A: The TAs have their office hours in Tate room 510-02. To get to room 510-02, take either elevator in Tate to the 4th floor. Walk to the Mall side of the building and follow the signs to the observatory, taking a half flight of stairs up and through doors. The TA office hours are in the glass-walled room, 510-02. You can visit any of the TAs during their office hours.

Q: For the second midterm, what exactly does the 20% previous material entail? Does it mean all of the material in the first 7 chapters, or just questions from Midterm 1?

A: It means just questions from Midterm 1.

Q: For the final exam, what exactly does the 20% previous material entail? Does it mean questions off of Midterms 1 and 2 or just Midterm 2?

A: It means just questions from Midterm 2.

