Astronomy of Stars and Galaxies AST 102

AST102 CRN 95204
Class modality: in person, on campus
Meeting times: Tuesdays 12:30-1:45pm (T-211), Thursdays 12:30-1:45pm and 1:50pm-3:40pm (T-201)
Professor: Dr Glenda Denicoló
Email: denicog@sunysuffolk.edu (email is the best way to contact me)
Office hours (office T-218): Mon 9-10:45am, Tue 9:30-11am, Wed 9-10:45am.
Tutoring: free tutoring is available in T-210. Check the schedule posted at the door of T-210, and in D2L.

Textbook: Astronomy by OpenStax (free digital copy) https://openstax.org/details/books/astronomy-2e
Required for labs: Registration with class key **d4bcc392** ($10/semester) https://www.pivotinteractives.com/
Other required materials: always bring a Scientific Calculator. No cell phones will be accepted as calculators.

Catalog Description

Introduction to fundamental aspects of universe beyond our solar system. Topics include properties of electromagnetic radiation and its relation to study of celestial objects; structure, classification and evolution of stars, nebulae, star clusters, galaxies, and material between stars. Age, origin and evolution of universe studied in terms of modern cosmology. Occasional evening observations required. Note: Fulfills SUNY-GE Natural Sciences. (3 hrs. lecture, 2 hrs. laboratory.) Prerequisite: MAT007 or equivalent. Offered on: A-E-G / 4 cr. hrs.

Course Learning Outcomes

Upon completion of this course, students will be able to:

1. Use measurements and astronomical data to describe the universe.
2. Summarize how the scientific method applies to astronomy.
3. Explain how the properties of light are used to obtain information about the universe.
4. Compare the fundamental properties of stars to the Sun and each other.
5. Describe the structure of the Sun.
6. Trace the evolution of stars from birth to death.
7. Compare the fundamental properties of galaxies to the Milky Way and each other.
8. Describe the past and future evolution the universe.
9. Discuss recent developments in the field of astronomy.

Grade Policy

Item	Grade weight
Labs (13 – 3 lowest = 10; or 3 points each)	30%
Tests (3; 19 points each)	57%
Optional cumulative Final Test (replaces lowest Test if taken) (1)	(19%)
Planetarium Test (1)	10%
Class attendance (> 90%, or 0-2 missed classes)	2%
Pre- and post-assessments together (no point for only one)	1%
EXTRA: Extra credit presentation (1)	2%
EXTRA: Attending an observing night or talk at SCCC or SBU (1)	1%
Total =	**103% !!**

The final course grade will be a combination of the 10 best lab grades, 3 tests (if Final Test is taken, it will substitute the lowest grade of one of the first 3 tests), 1 planetarium test, class attendance, and completion of course assessments. Optionally, students can be awarded extra credits by giving a 5-min presentation at the end of the semester (see schedule), and by attending an observing night or talk (see information in D2L). No other form of extra credit will be given.

There is **no make-up for the Tests**. The first 3 tests are non-cumulative. If a student misses one of the initial 3 tests, the students should take the cumulative Final Test to replace the missed one.

Grades will always be posted in D2L. Student must check grades regularly. If there is any inconsistency or questions, consult the instructor within a week. Do not leave problems or questions to the last week of the semester.

Reach out and speak up as soon as possible when/if an issue comes up. Communications of extenuating circumstances done only at the end of the semester will have no effect.

There will be NO curving of the grades in this course. Your final grade is non-negotiable. The is the letter grade breakdown that will be used is shown on the right.

According to the Family Educational Rights and Privacy Act (FERPA), grades will never be discussed via e-mail or phone, only in person. Always check your grades in D2L.

$89.5 \leq$	A	≤ 100
$84.5 \leq$	B+	≤ 89.4
$79.5 \leq$	B	≤ 84.4
$74.5 \leq$	C+	≤ 79.4
$69.5 \leq$	C	≤ 74.4
$64.5 \leq$	D+	≤ 69.4
$59.5 \leq$	D	≤ 64.4
	F	≤ 59.4

Lab activities and policy

There are a total of 13 lab activities that **must be completed and submitted in class**. The work will be **done in groups**. Everyone in a group will receive the same grade. However, *if a member of the group departs before the submission of the lab, that group member will be given zero for that lab activity.*

There is **no make-up for the labs** because the 3 lowest lab grades will the dropped at the end of the semester.

Lab activities are available inside PivotInteractives, which can be accessed via D2L or directly at https://www.pivotinteractives.com/.

Each **group of students will be given a laptop** to access the lab activity. **Students are welcome to bring their own computer device if they wish** (**no tablets or cell phones** can be used, as they will not display the lab information correctly). No installation is necessary, as PivotInteractives **runs in a browser**. Preferred browsers are Chrome, Firefox, or Safari.

Before you can access our lab activities inside PivotInteractives you must register and pay. The cost is $10 for the entire semester, for each student (payment is required at registration). The **registration link** to our class (only our class, do not share with other classes) is:

https://app.pivotinteractives.com/join-class?classKey=d4bcc392

class key: **d4bcc392**

Students should check the links to Pivot Interactive tutorials (how to register, how to access and work on activities etc) available in D2L.

Solutions and corrections will be available in PivotInteractives within a week of the submission of the lab. Lab grades will also be posted in D2L. **Students should consult the graded labs to study for tests**.

Planetarium

There will be one Planetarium Test at the end of the semester worth 10% of the final grade.

Students are encouraged to access the planetarium room (**always complete the sign-in sheet at the door**) during the semester to practice for the test. In D2L, students can find the explanation of the remote-control used in the planetarium, and the list of constellations, asterisms and stars that will be asked in the Planetarium Test.

If the planetarium room is locked, students can ask access to any astronomy faculty available (my office is 218), or to Mrs. Deanna Downs (office 220), or book a time in advance.

During the semester, the instructor will visit the planetarium a few times with the students to guide them through the material that will be asked in the Planetarium Test.

Our attendance policy (also check The College's attendance policy)

Due to the nature and amount of the material in this course, it is crucial that each student attend every lecture and laboratory session.

In our course, students will be awarded 2 points in their final grade if they miss only 0-2 classes per semester, which corresponds to more than 90% attendance. Anyone who misses more than 2 classes will not be awarded any attendance point.

Students missing classes must contact the instructor as soon as possible to learn about any updates or announcements that may have happened during the missed class. **It is the student's responsibility to reach out as soon as possible.**

Our withdrawal policy (also check The College's W policy)

Students can withdraw by completing a form and submitting it to the registrar's office by **Monday November 4, 2024** (deadline). It is common *courtesy to previously communicate to your instructor that you intend to leave the course*. https://www.sunysuffolk.edu/current-students/registrar/withdrawal.jsp

Withdrawals after the deadline would require the instructor's permission but **this instructor's policy is that no W will be given to students after the deadline, unless there is a medical or similarly well-justified reason**.

Only students who submit a course withdrawal form on or before the deadline are guaranteed a W.

Please note that **if you stop attending class without officially withdrawing, you are likely to be given an F** by your instructor. It is important to know also that the instructor has no means to give you a W at the end of the semester (this option is not available in the school system when entering the final grades). **Withdrawal is an action started by the student** and it must go through the registrar's office before the end of the semester.

College Policies

Preventing Spread of Respiratory Viruses

When you are sick CDC recommendations concerning COVID-19 have been updated effective March 1, 2024. Current precautions recommend that if you have symptoms of common respiratory viruses such as COVID-19, flu, and RSV, that aren't better explained by another cause, may be contagious and you should stay home and away from others. Students can return to normal activities when their symptoms have been improving for at least 24 hours, and, if they had a fever, when their fever has been gone without use of fever-reducing medication for at least 24 hours. After returning to normal activities, you should continue to take added precaution using prevention strategies such as wearing a well-fitting mask for the next 5 days, enhancing hygiene practices, keeping a distance from others, and/or testing when you will be around other people indoors. If you never had symptoms but tested positive for a respiratory virus, you may be contagious and should take the same added precautions for the next 5 days when you will be around other people indoors. If you develop a fever or start to feel worse after you have gone back to normal activities, the CDC recommends you follow the stay home precaution outlined above again before returning to normal activities.

Attendance Policy

Regular attendance is considered essential for academic success. Students are expected to attend every class session, no matter the modality, of each course for which they are registered. Excessive absences may have a negative impact on a student's academic performance and/or eligibility for financial aid.

Each instructor must provide an attendance policy in the course syllabus, allowing for a minimum of one week's worth of absences including absences due to illness or other unforeseen circumstances. For example, if a class meets twice a week in a 15-week term, a student must be entitled to at least two absences. The equivalent of one week may differ depending on the length of the term.

The College defines attendance in online courses as regular participation in course-related activities, which may include, but is not limited to: contributing to online discussion, engaging in virtual live instruction (when applicable), submitting an assignment, taking a quiz or exam, viewing and/or completing a tutorial, or communicating with a faculty member regarding course content. Logging into an online class is not sufficient, by itself, to demonstrate attendance or participation by the student.

Students absent from a class for any reason are responsible for any missed work and any other relevant requirements stated in the course syllabus. In the event that a student is absent, it is always recommended that the student contact the instructor to discuss missed work and class content.

Federal financial aid regulations require the College to report a student's last date of attendance for each course; in most cases faculty will be asked to confirm this date. Consequently, faculty must take attendance at each class meeting.

In accordance with New York State Education Law, Section 224-a, any student who is unable, because of religious beliefs, to register or attend classes on a particular day or days will be excused from any examination, study, or work requirements [scheduled on that day]. It is the responsibility of the faculty to make available [to the student] an equivalent opportunity to make up any examination, study, or work requirements within a reasonable amount of time of the religious observance. It is the responsibility of students to notify their professor at least one week prior to the religious observance, via their College email accounts or otherwise in writing, of their intention to be absent from class.

Course Withdrawal Policy

The Course Withdrawal Policy can be found within Academic Policies under "Withdrawal".
See deadlines and forms for additional information.

Services for Students with Disabilities

Suffolk County Community College provides reasonable accommodations to registered students with disabilities who have self-identified and been approved by the Office of Disability Services. Once approved for reasonable accommodations, such students will be provided with an Accommodation Letter, describing the specific accommodations. Students must present this letter to each of their professors before accommodations can be provided. Students are encouraged to email this letter to their faculty member.

Students who have, or think they may have, a disability are invited to contact Disability Services for a confidential consultation. Students are encouraged to contact the office by email this semester.

Disability Services Contact Information

Ammerman Campus Call 631-451-4045 or email the Office at disabilityA@sunysuffolk.edu
Eastern Campus Call 631-548-2527 or email the Office at disabilityE@sunysuffolk.edu
Michael J. Grant Campus Call 631-851-6355 or email the Office at disabilityG@sunysuffolk.edu

Academic Integrity

Suffolk County Community College provides students with the opportunity to demonstrate their knowledge by submitting coursework that is uniquely theirs and giving proper attribution to the work of others. Participating honestly in the SCCC academic community ensures that students can take pride in their education and their contributions to scholarship. Without academic integrity, students gain unfair advantage over others and prevent their own intellectual progress. As a student in this class, you are expected to uphold the SCCC core value of Integrity and understand the Special Procedures for Academic Dishonesty in the relevant sections of the SCCC Student Code of Conduct.

The Code prohibits academic misconduct, which includes any action that results in students giving or receiving unauthorized assistance in an academic exercise, or receiving credit for work that is not their own. Academic exercise includes all forms of work submitted for credit. Academic misconduct includes, but is not limited to, the following behaviors: cheating - unauthorized use of textbooks, notes, mobile devices, artificial intelligence tools or other sources during an academic exercise; plagiarizing - using another person's work or ideas without crediting them, including using material generated by artificial intelligence tools for an assignment without instructor authorization; complicity - helping a student, or being helped, to engage in academic misconduct; multiple submissions - submitting the same work for credit in more than one course without the instructor's permission; falsification and forgery - inventing information or falsifying the identity of a student. Information about the Student Code of Conduct, plagiarism and the citation process is in the Academic Integrity webpage.

Diversity

In alignment with our institutional mission and strong support of diversity, equity and inclusion, Suffolk County Community College reaffirms its commitment to providing access to higher education and a welcome environment to all students. No matter your age, race, ethnicity, national origin, gender identity or expression, sexual orientation, family status, U.S. citizenship status, religion, socio-economic status, political ideology, military-connected status, or intellectual or physical ability - you belong here. Therefore, in this class, we will maintain an atmosphere of mutual respect, civil discourse and cross-cultural communication. The College prohibits discrimination and harassment, and you can read more at: www.sunysuffolk.edu/nondiscrimination

Mental Health & Wellness Services (MHWS)

SUNY Suffolk understands that your academic success goes hand-in-hand with your mental health and well-being. We want you to know that if you ever need support for your emotional, psychological, or social well-being, our Mental Health & Wellness Services counselors are here for you. Counseling services are free and completely confidential. For more information about MHWS and our events this semester, visit our website: SUNY Suffolk Mental Health Services or follow us on Instagram @SCCCMentalHealth.

To schedule an appointment with one of our licensed mental health professionals, you can email MHWS at mentalhealth@sunysuffolk.edu or give your campus MHWS office a call.

Ammerman Campus: 631-451-4040
Eastern Campus: 631-548-2650
Michael J. Grant Campus: 631-851-6876

AST102 CRN 95204 Tue 12:30-1:45 (T-211), Thu 12:30-1:45, 1:50-3:40 (T-201)

W	Date	Activity	Textbook chap/sec
1	Tue Aug 27	Introduction to AST102; *pre-assessment to evaluate the course*	
	Thu Aug 29	Brief overview of astronomy **Lab 1**: Planetarium with https://stellarium-web.org/; **Planetarium room**	1
2	Tue Sep 3	Scales, the universe in powers of ten, units, constellations, horizon system	2.1
	Thu Sep 5	Patterns and cycles in the sky, seasons **Lab 2**: Overview of mathematical and scientific tools	4.1-4.2
3	Tue Sep 10	Basic properties of light, electromagnetic spectrum	5
	Thu Sep 12	Atomic transitions, types of astronomical spectra **Lab 3**: Basic coordinates and seasons	5
4	Tue Sep 17	Doppler effect, astronomical instruments	5, 6
	Thu Sep 19	Newton's law of gravitation **Lab 4**: Gravity and orbits – Part 1	3
5	Tue Sep 24	**Test 1**	
	Thu Sep 26	The Sun (structure, composition, solar cycle) **Lab 5**: Gravity and orbits – Part 2	15
6	Tue Oct 1	The Sun (nuclear fusion)	16
	Thu Oct 3	Analyzing star light (brightness, color, spectra) **Lab 6**: What is this star made of?	17
7	Tue Oct 8	Stellar spectra	17
	Thu Oct 10	Surveying stars (mass, diameter) **Lab 7**: The HR diagram – Part 1	18
8	Tue Oct 15	Surveying stars (variable stars, star clusters)	19, 22.2
	Thu Oct 17	Surveying stars (formation of stars) **Lab 8**: The HR diagram – Part 2	21.1-21.2
9	Tue Oct 22	Life cycle of stars (cycle for low-mass stars)	22.1, 22.3-22.4, 23.1
	Thu Oct 24	Life cycle of stars (cycle for high-mass stars) **Lab 9**: Doppler effect	22.5, 23.2-23.3
10	Tue Oct 29	**Test 2**	
	Thu Oct 31	Stellar graveyard (white dwarf), interstellar medium (gas, dust) **Lab 10**: Distance to stars – Part 1	20
11	Tue Nov 5	Life cycle of cosmic material, evolution of binary star systems	23.5
	Thu Nov 7	Stellar graveyard (pulsars, neutron stars, gamma-ray bursts) **Lab 11**: Distance to stars – Part 2; **Planetarium room**	23.4-23.6
12	Tue Nov 12	Black holes	24.5-24.6
	Thu Nov 14	The Milky Way (characteristics, its center) **Lab 12**: Cosmic ladder	25
13	Tue Nov 19	The Milky Way (stellar populations, formation)	25
	Thu Nov 21	Galaxies (properties) **Lab 13**: Expanding universe	26
14	*(no class)*	*No class – Thanksgiving recess*	
	(no class)	*No class – Thanksgiving recess*	
15	Tue Dec 3	Galaxies (evolution, quasars, AGN)	27, 28
	Thu Dec 5	The Big Bang; cosmology (dark matter, dark energy, future of the universe) *post-assessment to evaluate the course*	28.4, 29
16	Tue Dec 10	**Test 3**	
	Thu Dec 12	**Extra credit presentations**; **Planetarium Test** **Optional cumulative Final Test (1:15 min)**	

The current schedule is subject to changes due to any class cancellations or adjustments. Students must attend class to learn about any changes, or must email instructor immediately to learn, in case a class is missed.

DISCLAIMER

General rules are posted in your course outline. But even if a rule is not specifically shown in your course outline, it may be announced only in class and it is a valid new rule that must be followed. If there are changes to any existing rules, these too will be announced in class whether or not they are in print.

Students are responsible for apprising themselves of anything that transpires in class whether or not they are in attendance. All students need to be aware of all announcements whether or not they are in attendance. Ask another student. E-mail the professor and ask to update you on any new announcements. If you missed a class, you must ask: it is YOUR responsibility to ask.

Professors are not "babysitters", i.e., they will not remind you all the time of the requirements presented in the course outline: you have the responsibility to know what is strictly expected from you.

All students are personally accountable for all submitted work. You must keep track of your own progress in class. Learn where to check your grades and your calculated final grade at all times (it's in the gradebook in D2L!); estimate your own final grade to know where you are heading to. This only requires basic knowledge of math: ask for help if needed right at the start of the semester.

YOU are responsible for the grade you receive.

Professors are just messengers in the classroom: the grade you get is not "given" by the professor – it is the grade that you gave to yourself, the grade you have earned, in direct correspondence to how much YOU have studied, worked and learned about the subject. Taking responsibility for your own acts and taking responsibility for your own work is a good rule for life.

cut here ✂ cut here ✂ cut here ✂

Return this signed slip to the professor by the 2nd class meeting.

I have read and am aware of all the information contained in the course outline of AST102.

Date: ____/____ /____

Name (please print): _____

Your signature: _____