



蘇州大學
Soochow University

AST 102 Astronomy II

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

This course is the second of a two-semester sequence: Astronomy I/Astronomy II. This course covers some basic astronomy and physics needed to understand stars, clusters, galaxies and the Universe. It also provides a comprehensive survey of celestial phenomena, including the origins, characteristics, and life cycles of stars. By the end of this course, students will have a profound understanding of the cosmos and its fundamental principles, preparing them to engage with the wonders of the universe in a more profound and informed manner.

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

1. Understand the processes of star formation, the main sequence and the various stages of stellar evolution;
2. Describe the Milky Way Galaxy's structure and properties;
3. Describe the composition and role of the interstellar medium in star formation and the evolution of galaxies;
4. Examine the large-scale structure of the universe.

PREREQUISITES

AST 101 Astronomy I

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM

POINTS



2 Assignments	20 Points
2 Quizzes	20 Points
Midterm Exam	25 Points
Final Exam	35 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Astronomy (Senior Contributing Authors: Andrew Fraknoi, David Morrison, Sidney C. Wolff).

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	<p>Topics: Topic 1: The Brightness of Stars Topic 2: The Spectra of Stars and Brown Dwarfs Topic 3: Stellar Masses Topic 4: The H–R Diagram</p> <p>Assessments: Assignment #1</p>
Module 2	<p>Topics: Topic 5: Celestial Distances Topic 6: Variable Stars: One Key to Cosmic Distances Topic 7: The Interstellar Medium Topic 8: Interstellar Matter around the Sun</p> <p>Assessments: Quiz #1</p>



Module 3	Topics: Topic 9: Star Formation Topic 10: The H–R Diagram and the Study of Stellar Evolution Topic 11: Evolution from the Main Sequence to Red Giants Topic 12: Star Clusters Assessments: Midterm Exam
Module 4	Topics: Topic 13: The Death of Stars Topic 14: Supernova Observations Topic 15: Pulsars and the Discovery of Neutron Stars Topic 16: The Evolution of Binary Star Systems Assessments: Assignment #2
Module 5	Topics: Topic 17: Introducing General Relativity Topic 18: Black Holes Topic 19: Gravitational Wave Astronomy Topic 20: The Milky Way Galaxy Assessments: Quiz #2
Module 5	Topics: Topic 21: The Evolution and Distribution of Galaxies Topic 22: The Big Bang Topic 23: Life in the Universe Topic 24: The Search for Extraterrestrial Intelligence Assessments: Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately



prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (e.g., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that



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students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.