

ASTR 303 - Introduction to Galaxies

An introduction to Extragalactic Astronomy and Cosmology

Class times: Mon-Thur 14:30-16:00 at CLE C108 (*Clearihue Building*).

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Office hours: Tues 10:30am-11:30am or upon request

Description

An introduction to extragalactic astronomy, with a focus on observational properties of galaxies. We will motivate the study of galaxies and their place in cosmology & astrophysics through the introduction of observational techniques, principles of gravity, stellar motion, classification of galaxies, galaxy formation, clusters, dark matter, and large scale structure.

Textbook

No textbook is required, but if you wish to supplement the lecture material and your own notes, some lectures follow “Galaxies in the Universe” by Sparke & Gallagher (Cambridge Univ. Press). This is not necessary to understand the material or complete the assignments/exams.

Other books covering similar material (and more advanced!) include “Galactic Astronomy” by Binney and Merrifield, “Galactic Dynamics” by Binney and Tremaine, and “Galaxy Formation and Evolution”, by Mo, van den Bosch and White, and “Introduction to Galaxy Formation and Evolution” by Cimatti, Fraternali, and Nipoti (Cambridge Univ. Press).

Evaluation

Homework assignments	25%	<ul style="list-style-type: none">5 homework assignments, roughly one every other week. These will be problem sets that you will submit for grading.
In-class quizzes	10%	<ul style="list-style-type: none">MidTerm and Final exams are required components of the course, and will be in person and on paper.
Midterm Exam	20%	<ul style="list-style-type: none">MidTerm and Final exams will be multiple choice, based on homework assignments and lectures
Computational Assignment	15%	
Final Exam	30%	

- In-class “quizzes”: There will be 10 different multiple-choice polls, roughly one per week. You will have two separate chances to respond, each worth 1/2 point. One response will be individual, the other will be after a consultation with other students in the class.

Note on Plagiarism: Unacceptable. Never copy work from each other, nor cite work

from others without proper acknowledgment. Collaboration and discussion are fine, but the work you submit must be your own.

Lecture Schedule (tentative)

	Week	Lecture Date	Broad Topic
	1	Jan 6	Stars & Galaxies
		Jan 9	
	2	Jan 13	Observational Techniques
		Jan 16	
	3	Jan 20	Galaxy Populations
A1 due		Thurs Jan 23	
	4	Jan 27	Gravity
		Jan 30	
	5	Feb 3	Elliptical Galaxies
A2 due		Thurs Feb 6	
	6	Feb 10	Disc Galaxies
midterm		Thurs Feb 13	
Reading Week	7	Feb 17	Reading Week
Reading Week		Feb 20	Reading Week
A3 due	8	Mon Feb 24	
Last Drop Day (Feb 28)		Feb 27	
	9	Mar 3	Cosmology
		Mar 6	
A4 due	10	Mon Mar 10	Galaxy Formation
		Mar 13	
	11	Mar 17	Galaxy Clusters
		Mar 20	
A5 due	12	Mon Mar 24	Gravitational lensing
		Mar 27	
	13	Mar 31	Cosmology and large scale structure
Computational Assignment Due		Thurs Apr 3	
Final		TBD	