

Spring 2020

PHYS 321-002: Astronomy and Astrophysics II (Revised for Remote Learning)

Bin Chen

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PHYS 321

Astronomy & Astrophysics II, Spring 20

Overview

PHYS 321 is the second of a two-semester introductory sequence to astronomy and astrophysics. It is a quantitative introduction to the astronomy of stars, the galaxy, and cosmology, with an emphasis on the physical principles involved.

Course Outline

1. Light, Blackbody Radiation, Color Index
2. The Interaction of Light and Matter
3. Stellar Spectra and Stellar Atmosphere
4. The Interiors of Stars
5. Stellar Birth
6. Stellar Evolution
7. Stellar Remnants
8. Black Holes and General Relativity
9. Close Binary Star Systems
10. The Milky Way Galaxy
11. Galaxies and Galactic Evolution
12. The Structure of the Universe
13. Cosmology

Grading

Homework (20%), **class participation and final presentation** (20%), **two in-class exams** (15% each, 30% total), and **final exam** (30%). Conversion to the final letter grade is based on the following chart. Grades are not negotiable.

A	B+	B	C+	C	D/F
>85	>75-85	>65-75	>55-65	50-55	<50

Class Policies

Students must attend all classes, *in person or virtual*, unless they have a legitimate reason and have notified the professor in prior to the class. **Makeup exams** will only be allowed under extraordinary circumstances such as severe illness. Students need to contact the professor in advance to make alternative plans for taking the exam and must present proof that clearly states the reason AND date. **Use of phones, tablets, and laptops is restricted** only to in-class exercises or note taking. The [University Academic Integrity Code](#) is taken very seriously and enforced strictly.

Hours: TuTh 2:30–3:50 PM

Instructor: Prof. Bin Chen

Classroom: FMH 321, or

<https://njit.webex.com/meet/binchen>

Contact: bin.chen@njit.edu

Office: Tiernan Hall 101

Office Hour: By appointment

Textbook

Introduction to Modern Astrophysics, 2nd Edition, by Carroll & Ostlie. This is the same textbook as PHYS 320.

Prerequisite

Phys320 Astronomy & Astrophysics I

Course Web Page

<https://canvas.njit.edu/>, where you will find lecture notes, homework assignments, announcements, and/or reading assignments.

Homework

Homework assignments are all written assignments, due each week at the **start** of the class. Late submissions will have grades reduced by 50% and **must** be turned in by the last class for credit.

Class Participation

Students are expected to attend all classes and participate in discussions. This, together with a **final presentation**, will determine this part of the grade.

Exams

There will be **two in-class exams** and **one final exam**. The format of the exams is similar to homework problems. The final exam has to be taken to receive a passing grade. Bring calculators.