

Spring 2024

## **PHYS 202 - 106: Introductory Astronomy and Cosmology**

George Georgiou

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# Introductory Astronomy and Cosmology

Phys 202–106      Spring 2024

W 6-8:50          ECE100

**Slides and reinforcing videos, are posted before class on [canvas.njit.edu](https://canvas.njit.edu).**

## Instructor

Dr. George E. Georgiou

TIER 423E

[georgiou@njit.edu](mailto:georgiou@njit.edu) (preferred contact method)

OFFICE HOURS: W 4-5:30, after class or by appointment (send email)

## Textbook

### Primary on which class is based:

“Astronomy” by A.Fraknoi, D.Morrison, S.Wolf ...

Downloadable Open Stax text: <https://openstax.org/details/books/astronomy>

### Optional paper textbook: (if do not like reading e-books)

Jeffrey Bennett, Megan Donahue, Nicholas Schneider, and Mark Voit. *The Cosmic Perspective Fundamentals*, 2<sup>nd</sup> Ed. Pearson Education, Inc., United States of America, 2015. – but ANY EDITION will work for reading material

### Additional Reading (optional but may be interesting):

Neil deGrasse Tyson, J. Richard Gott and Michael A. Strauss, *Welcome to the Universe, an Astrophysical Tour*, Princeton University Press (2016)

## Grade

**Your final grade will be based upon class participation / attendance (10%), two in-class exams (25% each), and one Final Examination (40%).** The number grade is  $.25 * (\text{exam 1} + 2) + .4 * \text{Final} + .1 * \text{participation}$ .

The exam schedule is as follows:

First Examination	(25%)	2/21 Wednesday (Thru week 5)
Second Examination	(25%)	3/27 Wednesday (Thru week 9)
Final Examination	(40%)	5/8 Wednesday (All-inclusive)

There are no make-up examinations without a valid reason. The following table will determine your final letter grade.

85% to 100%	A
80% to 85%	B+
70% to 80%	B
65% to 69%	C+
55% to 64%	C
40% to 54%	D
0% to 39%	F

Introductory Astronomy and Cosmology (Phys 202) and Introductory Astronomy and Cosmology Laboratory (Phys 202A) are two separate courses. You can be registered for 202 now and take 202A later.

## Academic Integrity

Any student who is disruptive in the classroom or cheats during an examination, will be in violation of the Academic Honor Code and will be reported to the Dean of Student Services.

## Syllabus (Chapters for reading refer to OpenStax Download text)

Week 1 -- W	1/17	Observing the Sky (Chapters One & Two) Orbits and Gravity (Chapter Three)
Week 2 -- W	1/24	Earth, Moon, and Sky (Chapter Four) Radiation and Spectra (Chapter Five)
Week 3 -- W	1/31	Astronomical Instruments (Chapter Six) Introduction to the Solar System (Chapter Seven)
Week 4 -- W	2/7	Earth and Other Cratered Worlds (Chs. 8 and 9) Venus and Mars (Chapter Ten)
Week 5 -- W	2/14	Giant Planets, Rings, Moons (Chapters 11 and 12) Comets, Asteroids, Samples (Chapters 13 and 14)
Week 6 -- W	2/21	The Sun (Chapters 15 and 16) EXAM 1 (uses Canvas, in-class)
Week 7 -- W	2/28	Starlight and Stars (Chapters 17 and 18) Distances. Gas & Dust in Space (Ch. 19 and 20)
Week 8 -- W	3/6	Star & Planet Formation (Chapter 21) Stars' Adolescence to Old Age (Chapter 22)
SPRING BREAK – 3/10 to 3/16		
Week 9 -- W	3/20	Death of Stars (Chapter 23) Review for exam 2
Week 10 -- W	3/27	Black Holes, Curved Space-Time (Chapter 24) EXAM2 (uses Canvas, in-class)
Wk11 -- W	4/3	The Milky Way Galaxy (Chapter 25) QSOs, Black holes, Galaxy Evolution (Chs. 27 & 28)
Wk 12 --	4/10	The Big Bang (Chapter 29)
Wk 13 -- W	4/17	More Big Bang (Chapter 29) REVIEW
Last Day of Class Reading Days	T 4/30 (Friday Schedule) W and R May 1-2	
FINAL EXAM	Pobably W 5/8	Cummulative,

## Spring 2024 Academic Calendar

January	16	Tuesday	First Day of Classes
January	22	Monday	Last Day to Add/Drop a Class
January	22	Monday	Last Day for 100% Refund, Full or Partial Withdrawal
January	23	Tuesday	W Grades Posted for Course Withdrawals
January	29	Monday	Last Day for 90% Refund, Full or Partial Withdrawal, No Refund for Partial Withdrawal after this date
February	12	Monday	Last Day for 50% Refund, Full Withdrawal
March	4	Monday	Last Day for 25% Refund, Full Withdrawal
March	10	Sunday	Spring Recess Begins - No Classes Scheduled - University Open
March	16	Saturday	Spring Recess Ends
March	29	Friday	Good Friday - No Classes Scheduled - University Closed
April	1	Monday	Last Day to Withdraw
April	30	Tuesday	Friday Classes Meet
April	30	Tuesday	Last Day of Classes
May	1	Wednesday	Reading Day 1
May	2	Thursday	Reading Day 2
May	3	Friday	Final Exams Begin
May	9	Thursday	Final Exams End
May	11	Saturday	Final Grades Due