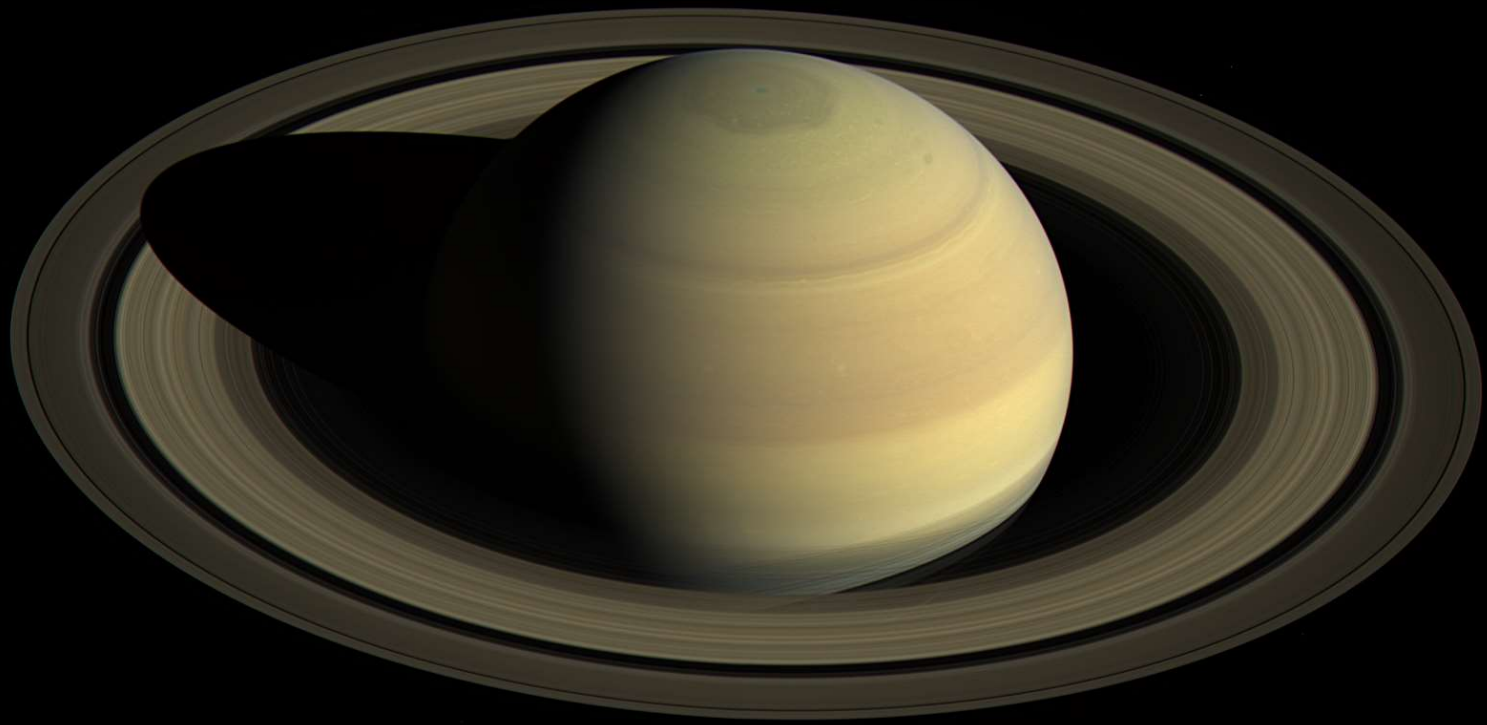
AST 2002
Introduction to Astronomy



Recommended Textbooks

The Cosmic Perspective

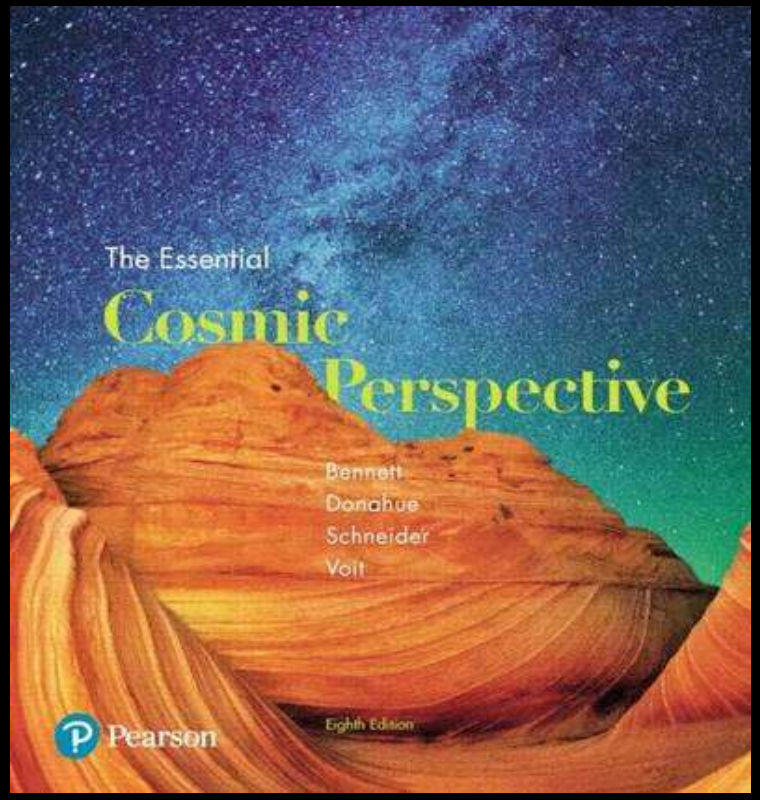
The Essential Cosmic Perspective

The Cosmic Perspective Fundamentals

8th Edition (Publisher: Pearson)

Authors: Bennett, Donohue, Schneider & Voit

Bookstore has loose-leaf version with online access package to MasteringAstronomy.com



Alternative Free Option: *Astronomy* by Fraknoi et al. which is made freely available by OpenStax at:

https://openstax.org/details/books/astronomy

Where to Find Me

Instructor Name: Prof. Chris Bennett
Office Location: Physical Science Building (PSB)
Room 308
Office Hours: Mon 3-4pm, Tue 3-4pm
E-mail: Christopher.bennett@ucf.edu

Please e-mail to arrange a time we can meet if you are unable to make scheduled office hours and need help…

Whenever you e-mail me, please use AST 2002 somewhere in the subject title

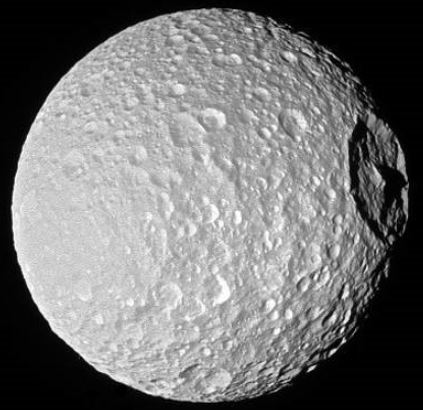
Course Goals

(Main) Learn the key concepts of modern astronomy, from planetary science to cosmology.

(Secondary) Learn how scientists use basic principles of physics to understand the larger cosmos.

(Secondary) Develop skills in quantitative reasoning, critical thinking, and scientific inquiry, using astronomy as a test case

Grading



4 Exams: (80% of total)

- 3 Mid-terms on ~1/4 of the course each.
- Best two grades will be kept at 20% each.
- Cumulative Final is worth 40%

8 Quizzes/Homeworks: (10% total)

- Will be assigned through Webcourses
- Aim is to reinforce knowledge and concepts learnt

Class Participation: (10% total)

- Using iClicker2 to answer questions in class
- Will cover the material to be discussed, recommended to read the chapters being discussed before coming to class

iClicker2

Available at the bookstore.

At the beginning of every class will sync with iClicker base (code BC).

Must register on Webcourses using knights email address within first week of class

Participation counts for 5%

Correct answers for 5%

We will use the 1st week to practice taking polls

Material may be based on reading material to be covered that lecture

Homework/Quizzes

10% of the Grade will be for Homework/Quizzes

The aim is to reinforce your learning of subject matter covered in lecture and in the textbook

Expect ~ 8 homework/quiz assignments through Webcourses

Already a 'syllabus' quiz up there to satisfy the UCF activity requirement – must be done by the end of this week

Extra Credit

Attend an observing session at the UCF Robinson Observatory for up to 2% additional credit

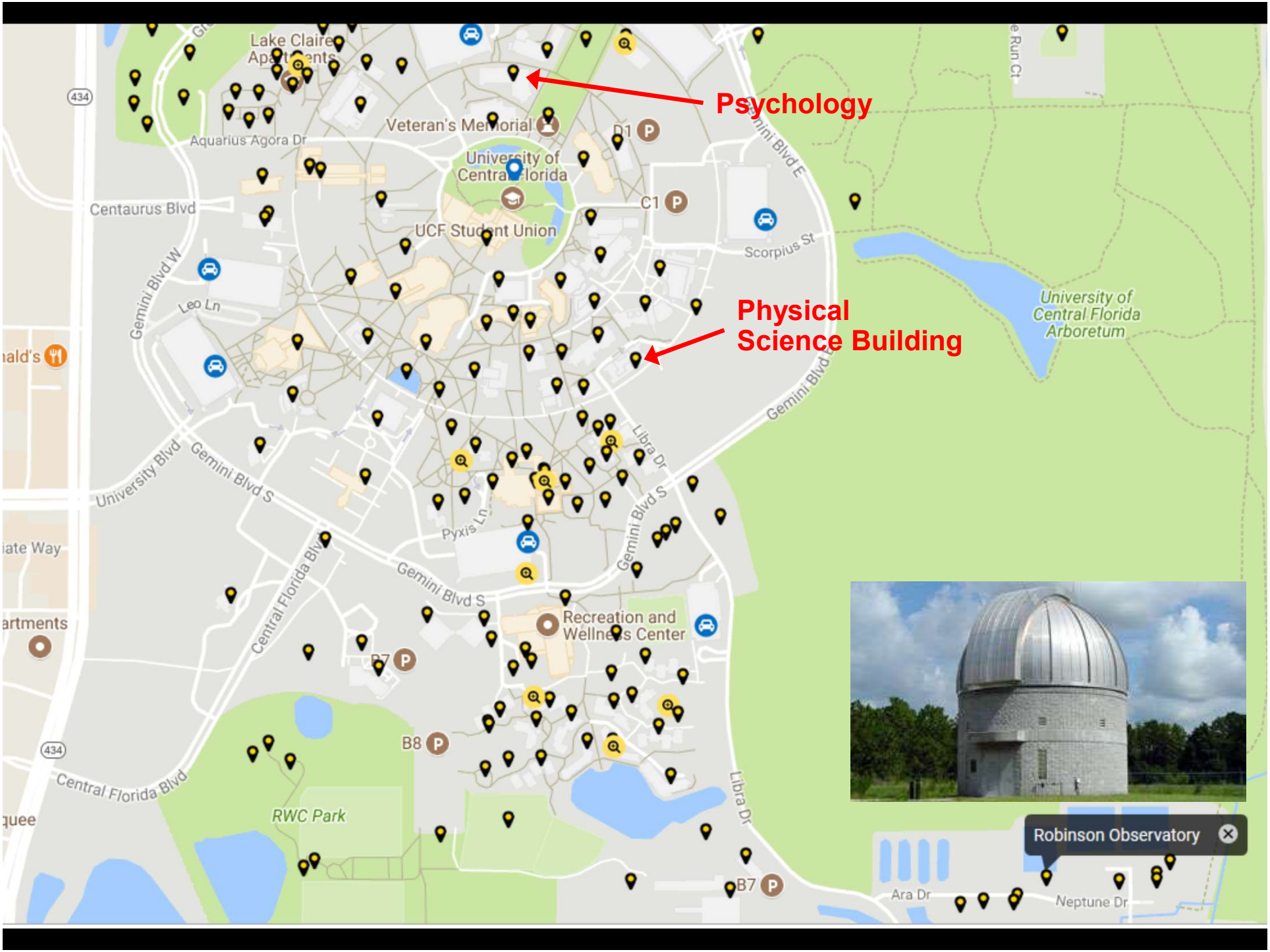
First event is scheduled for Wed Jan 31st

https://planets.ucf.edu/observatory/knights-under-the-stars-schedule/

Observing report forms are available at the Observatory

Forms must be received by Fri 20th April

This is usually sufficient to put someone into a higher grade boundary


Psychology
Physical Science Building
Robinson Observatory
Lake Claire Apartments
Veteran's Memorial
University of Central Florida
UCF Student Union
Aquarius Agora Dr
Centaurus Blvd
Gemini Blvd W
Leo Ln
Scorpius St
Gemini Blvd E
University of Central Florida Arboretum
University Blvd
Gemini Blvd S
Pyxis Ln
Libra Dr
Central Florida Blvd
Recreation and Wellness Center
RWC Park
Ara Dr
Neptune Dr
D1
C1
B7
B8
434

Lectures

MWF 9:30-10:10 am

- Will be loosely based upon *The Essential Cosmic Perspective* textbook
  - Read the book, do not rely on all the information coming from the lecture. Lectures supplement the book and vice versa.
  - Will have additional material in class that will be on the exams

- The PowerPoints Given in class will be available:
  - On Webcourses under the lectures files folder
  - Posted on my Website at http://sciences.ucf.edu/physics/bennett-lab/teaching/

- Almost Every class will have information not covered in the text or PowerPoints, so class attendance is mandatory to do well in this class…

A Few More Things…

This is a large class, you should get to know your colleagues, and can share course notes and work together on problems

I try to create a relaxed, but interactive teaching environment…

- **Be prepared to answer questions**
- **Feel free to ask questions, but do not do so to the point that it disrupts the flow of class too much!**
- **Be prepared to be involved in demonstrations…**

Preview of Topics – Tentative Schedule

Parts I & II: Developing Perspective & Key Concepts for Astronomy

#	Class Date	Chapter/Section(s)	Topics
1	Mon 8th Jan	Syllabus & 1.1	Introduction to the course, & the scale of the Universe
2	Wed 10th Jan	1.2-1.3	History of the Universe, Spaceship Earth
3	Fri 12th Jan	2.1	Patterns in the Night Sky
4	Mon 15th Jan	2.2	The Reason for Seasons
5	Wed 17th Jan	2.3-2.4	The Moon and Planets
6	Fri 19th Jan	3.1 -3.3	The Science of Astronomy I
7	Mon 22nd Jan	3.3-3.4	The Science of Astronomy II
8	Wed 24th Jan	4.1-4.2	Newton's Laws of Motion
9	Fri 26th Jan	4.3	Conservation Laws in Astronomy
10	Mon 29th Jan	4.4	Gravity
11	Wed 31st Jan	5.1	Light and Matter
12	Fri 2nd Feb	5.2	What we Learn from Light
13	Mon 5th Feb	5.3	Telescopes
14	Wed 7th Feb	Review 1	Review (Chapters 1-5)
15	**Fri 9th Feb**	**Exam 1**	**Exam (Chapters 1-5)**

Preview of Topics – Tentative Schedule

Part III: Learning from Other Worlds

#	Class Date	Chapter/Section(s)	Topics
16	Mon 12th Feb	6.1-6.2	Formation of the Solar System I
17	Wed 14th Feb	6.3-6.4	Formation of the Solar System II
18	Fri 16th Feb	7.1 and 7.5	Planet Earth
19	Mon 19th Feb	7.2-7.3	The Moon, Terrestrial Planets I
20	Wed 21st Feb	7.3-7.4	Terrestrial Planets II
21	Fri 23rd Feb	8.1	Jovian Planets
22	Mon 26th Feb	8.2-8.3	Satellites and Icy Rings of Jovian Planets
23	Wed 28th Feb	9.1-9.2	Small Bodies I: Asteroids and Meteorites
24	Fri 2nd Mar	9.3-9.5	Small Bodies II: Comets and Kuiper Belt Objects
25	Mon 5th Mar	Review 2	Review (Chapters 6-9)
26	**Wed 7th Mar**	**Exam 2**	**Exam (Focused on Chapters 6-9)**
27	Fri 9th Mar	10.1	Exoplanets I

Spring Break

Preview of Topics – Tentative Schedule

Part IV: Stars

#	Class Date	Chapter/Section(s)	Topics
28	Mon 19th Mar	10.2-10.3	Exoplanets II
29	Wed 21st Mar	11.1-11.2	The Interior of the Sun
30	Fri 23rd Mar	11.2-11.3	Solar Magnetic Fields and the Sun-Earth Connection
31	Mon 26th Mar	12.1	Stellar Properties and How We Measure Them
32	Wed 28th Mar	12.2-12.3	Hertzsprung-Russell Diagram and Star Clusters
33	Fri 30th Mar	13.1	The Interstellar Medium and Star Birth
34	Mon 2nd Apr	13.2	Low Mass Stars
35	Wed 4th Apr	13.3	High Mass Stars
36	Fri 6th Apr	Review 3	Review (Chapters 10-13)
37	**Mon 9th Apr**	**Exam 3**	**Exam (Focused on Chapters 10-13)**

Preview of Topics – Tentative Schedule

Part V: Galaxies & Beyond

#	Class Date	Chapter/Section(s)	Topics
38	Wed 11th Apr	14	White Dwarfs, Neutron Stars and Black Holes
39	Fri 13th Apr	15-16	Our Galaxy, A Universe of Galaxies
40	Mon 16th Apr	17	The Birth of the Universe
41	Wed 18th Apr	18	Dark Matter, Dark Energy & The Fate of the Universe
42	Fri 20th Apr	19	Life in the Universe
43	Mon 23rd Apr		
44	**Fri 27th Apr**	**FINAL EXAM**	**7:00 AM – 9:50 AM (on ALL CHAPTERS)**

How To Do Well in this Class…

Read the Book ahead of time

Attend Class

Participate in Class and ask questions

Do the Homework Problems Early

Come and see me during office hours if you have questions

Go and visit the Robinson Observatory