

# AST4930-5367(22355) - Special Topics

**AST 4930 - Prof. Eikenberry  
Compact Objects  
Syllabus for Spring 2021**

**Instructor: Prof. Stephen Eikenberry**

**Text: Black Holes, White Dwarfs, and Neutron Stars  
Shapiro & Teukolsky**

**Accretion Power in Astrophysics (3rd ed.)  
Frank, King & Raines**

**Class meetings: Tues 8 (3:00-3:50 PM)  
Thurs 8-9 (3:00-4:40 PM)**

This is a face-to-face section, which requires "a robust number of face-to-face classes", which is >51%, according to UF administration definitions. As such, our Tuesday meetings will be remote, and the Thursday classes (2/3 of the class meeting times) will be in-person in Rm 7 of the Bryant Space Science Center.

**Office hours: Mon, Tues (4:00-5:00 PM)**

This course is primarily intended for advanced undergraduate students in astronomy and astrophysics, and will study the observational and theoretical properties of compact objects (black holes and neutron stars) at the current level of understanding in the field.

**Course goals:**

The goal of this course is to provide a foundation in astrophysical compact objects, both for the student who intends to enter this field as well as for the student who will work in astrophysics in general, much of which is impacted by compact object astrophysics.

**Approach:**

The course will be divided into roughly four sections: isolated neutron stars, accretion theory, accreting neutron stars, and accreting black holes. Lectures will cover the basics of each section. Readings are listed in the course schedule

**Requirements:**

1. Assigned reading prior to class
2. Homework, Class Participation, & In-class "Pop" Quizzes (20% of final grade)  
Homework is occasional, as-needed (3-4 per semester).  
Quizzes are short and easy.
3. Final Project (80% of final grade)

**Final Projects:**

By late January, each student will choose a final project topic (suggestions below) for a 10-15-page final paper and a 30-minute in-

class presentation. The paper/talk should review current research in the topical area at the level of current understanding in the field (similar to Annual Reviews of Astronomy & Astrophysics). Several projects in a previous offering of this course resulted in published journal articles.

### Grading:

Given the above scoring (total of 100 points), the following grades will be assigned:

Grade	Minimum Score
A	93
A-	90
B+	87
B	83
B-	80
C+	77
C	73
C-	70
D+	67
D	63
D-	60

Note that I reserve the right to "curve" scores up, if I determine that the class score distribution indicates a mismatch between performance and my expectations. This can ONLY improve your numerical score and corresponding letter grade -- I will never apply a curve to reduce a student's score below the raw score.

UF's grading policy, including calculation of grade points and GPA is available at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### Contact Info:

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### Policy Items:

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Make-ups for missed exams, quizzes, or other items will be provided ONLY with written medical excuse from licensed medical professionals or for official University activities with written excuse from appropriate UF personnel (i.e. UF athletic team coach, UF professor, etc.). Without such an excuse, any missed exams, quizzes, or other work will be given a grade of ZERO. This includes in-class pop quizzes, which are unannounced.

I do not normally take attendance in class, but students are responsible for any material covered which they missed. Also, see above regarding missed graded assignments.

## Course Summary:

Date	Details
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