Physics 325 General Relativity
Spring 2016 · Syllabus

Magritte, R. *Fine Realities*, 1964

Lecture: 10:30-11:45 TR, Science Center G047
Office Hours: MF 2-5 pm and by appointment; G051 or 1038
Email: kjonessm@hamilton.edu
Text: *A Short Course in General Relativity*, Foster & Nightingale, 3rd edition.
A pdf of the book is available on Blackboard, and a copy will be placed in the Physics Common room.

Grading Scheme: Homework: 15 %
Class participation/presentations: 15 %
Quizzes: 40%, (4 quizzes, each worth 10%)
Final project: 30%

Planski: We will follow the book very closely, covering all 6 chapters, and culminating in a final project. The first four chapters cover tensor mathematics and basic tenets of GR, including a discussion of some of the classic 'solar system tests of gravity' that provide experimental confirmation of the theory. The final two chapters cover gravitational radiation and cosmology, which are important applications of the formalism of the first few chapters. To get the most out of this course and to understand the material as much as possible, you should read the book thoroughly and try to do all of the in-chapter exercises. The majority of your time outside of class should be spent reading, conscientiously, with great effort and concentration, and doing the in-chapter exercises. Solutions to the in-chapter exercises and the problems at the end of each chapter are in the back of the book, but these just outline the techniques and your homework should be much more detailed than what appears in the book.

We will follow a '3+1' format for this course, which means that we will typically spend 3 lectures covering material from the chapter, and then one day in class discussing

homework problems. On the +1 days I will ask for volunteers to present a homework problem, and if no one volunteers I will select people randomly. Your efforts on these days constitute 15% of your grade in the class. To do well in this component you should volunteer to do problems and have attempted them before the +1 class comes along so that you can present a good narrative of the solution.

Policies:*Laptops, etc*: Laptops, cell phones, tablets, etc. are not allowed in lecture. If you wish to take notes it should be on paper by hand. If this poses any difficulty for you please let me know and we can find a solution that suits your needs. Attempts to use technology surreptitiously are not appreciated; please refrain from use or do not come to class.

Lecture Notes: Lecture notes are available on Blackboard following each class.

Honor Code Statement: Your work in this course should be consistent with Hamilton's Academic Honor Code. If you use any resource besides the book, my lecture notes, and the people in this class, you should cite them on your homework. This includes Wolfram Alpha or Mathematica (and similar resources). An honor code statement must be present on all of the assignments you hand in for this course.

Accomodations: I request that anyone needing academic adjustments or accommodations speak with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities should also contact Allen Harrison, Associate Dean of Students for Multicultural Affairs and Accessibility Services in the Office of the Dean of Students (Elihu Root House; ext. 4021) who coordinates services for students with disabilities.