

# PHY 620: Modern General Relativity

**Instructor:** Patrick Meade

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**Class Meeting Time and Location:** MW 3:50-5:10 P-125

**Office Hours:** TBD

**Required Text:** "Spacetime and Geometry: An Introduction to General Relativity" by Sean Carroll (2004)

**Course Outline:** The first part of this course will focus on building from Special Relativity to General Relativity by investigating manifold and curvature followed by Einstein's field equations. We will then investigate certain solutions of Einstein's equations including certain types of Black Hole solutions. Time permitting we will also investigate perturbation theory and gravitational radiation, cosmology and quantum field theory in curved spacetimes.

**HW:** HW assignments will be handed out in class throughout the semester. You may work together on them, but the work that you turn in must be your own.

**Exams:** There will be a midterm and a final exam. The midterm will be held during class on Wednesday 3/21. The final exam is scheduled for 5/14 from 11:15-1:45.

**Grading Policy:** Your grade will be determined based on the higher of the following two grading schemes (Midterm 30%, HW 40%, Final 30%) or (Midterm 20%, HW 40%, Final 40%).

**DISABILITY SUPPORT SERVICES (DSS) STATEMENT** If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services (631) 632-6748, <http://studentaffairs.stonybrook.edu/dss/> . They will determine

with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to:

<http://www.stonybrook.edu/ehs/fire/disabilities.shtml>

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