Physics 711
Topics in Particles and Fields (General Relativity)

Local Instructor: Jason Kumar
WAT 436
jkumar@hawaii.edu
(808)956-2972

Lecturer: Pearl Sandick
University of Utah
sandick@physics.utah.edu
(801)581-8397

Class meets:
M W 11:00am-12:20pm (Daylight Savings Time)
12:00pm-1:20pm (Standard Time)
WAT 417

Course Textbook:
Spacetime and Geometry: An Introduction to General Relativity
Sean M. Carroll

Topics to be covered:

This is a graduate level introduction to general relativity. Topics to be covered include a brief discussion of special relativity, manifolds and elements of differential geometry, curvature, gravitation and Einstein's Equation, the Schwarzschild solution and black holes, and gravitational radiation.

Grading:

The course grade will be based on homework and exams

60% -- homework
15% -- midterm
5% -- presentation
20% -- final

Student Learning Outcomes:

By the end of the course:

1) Students will develop an understanding of general relativity from both mathematical and physical perspectives.
2) Students will be comfortable with calculations involving tensors and differential forms, and will be able to calculate curvature and geodesics and apply the Einstein field equations to simple physical systems.