

# PRELIMINARY LECTURE PLAN FOR AS.171.646 (GENERAL RELATIVITY)

Date	Topic
8/29	Newtonian gravity, hydrodynamics (PW 1.1, 1.2, 1.3, 1.4)
8/31	Conservation laws, virial theorem (PW 1.4)
9/5	Spherical and nearly spherical bodies (PW 1.5)
9/7	Motion of extended fluid bodies, Kepler problem (PW 1.6, PW 3)
9/12	Special relativity (PW 4.1)
9/14	Relativistic hydrodynamics, electrodynamics, point particles (PW 4.2)
9/19	Relativistic electrodynamics, point particles (4.3, 4.4)
9/21	Curved spacetime (PW 5.1, 5.2)
9/26	Mathematics of curved spacetime (PW 5.2)
9/28	Mathematics of curved spacetime (P 1)
10/3	Mathematics of curved spacetime (P 1, PW 5.2)
10/5	The geodesic equation (P 1, PW 5.2)
10/10*	Geodesic deviation, Riemann normal coordinates (PW 5.2)
10/12*	Physics in curved spacetime (PW 5.3)
10/17	Linearized theory (PW 5.5)
10/24	Linearized theory (PW 5.5)
10/26	The Schwarzschild solution (C+notes)
10/31	Classic tests of GR (C+notes)
11/2	Classic tests of GR (C+notes)
11/7	Stellar structure and white dwarfs (ST+notes)
11/9	Stellar structure and white dwarfs (ST+notes)
11/14 <sup>?</sup>	Neutron stars (ST+notes)
11/16 <sup>?</sup>	Neutron stars (ST+notes)
<b>Thanksgiving</b>	Reading assignments
11/28	Black holes (ST+notes)
11/30	Black holes (ST+notes)
12/5	Black holes (ST+notes)
12/7	Black holes (ST+notes)

**Legend:** PW=Poisson-Will, P=Poisson, ST=Shapiro-Teukolsky, C=Carroll

**Note:** On dates marked with a \* (?) I will be (may be) on travel