

**EART290Q (Physics of the Outer Solar System) - 2019**  
**Francis Nimmo**

**Timing/Location:** T.B.D.

**Course Goals:** To provide a quantitative, graduate-level investigation of the physical processes controlling the origin, evolution and state of bodies in the outer solar system, especially icy satellites.

**Texts:** Various, but Turcotte and Schubert *Geodynamics* and Murray and Dermott *Solar System Dynamics* are the two essentials.

**(Approximate) Course Outline**

Week 1 (6 Jan): No lectures

Week 2 (13 Jan): Conductive heat transfer.

Week 3 (20 Jan): Convection and Navier-Stokes.

Week 4 (27 Jan): Rheology and viscoelasticity.

Week 5 (3 Feb): Flexure and relaxation.

Week 6 (10 Feb): Tides and Orbits (1).

Week 7 (17 Feb): Tides and Orbits (2).

Week 8 (24 Feb): Shape, gravity, internal structure.

Week 9 (2 March): Cassini States

Week 10 (9 March): Impacts.