**Physics**

**PHYS 541  Physics of Compact Objects**  credit: 4 hours.

(PHYCS 406) A rigorous survey of the physical properties of black holes, white dwarfs, and neutron stars. The formation of compact objects. Equilibrium configurations, equations of state, stability criteria, and mass limits: the influence of rotation and magnetic fields. Pulsar phenomena. Black hole spacetimes. Hawking radiation. Mass flow in binary systems; spherical and disk accretion; high-temperature radiation processes; pulsar spin-up. Compact x-ray sources and x-ray bursts. Supermassive black holes in star clusters and dense galactic nuclei. Gravitational and neutrino radiation from supernova collapse and binary coalescence. Same as ASTR 541. The course does not assume any previous knowledge of astronomy or general relativity. (Offered in alternate years). Prerequisite: PHYS 436 or equivalent; or consent of instructor.

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