This minicourse will give a general overview of black hole astrophysics, focused on the Active Galactic Nuclei (AGN) phenomenon. Topics covered will include a concise treatment of physics required to understand these phenomena—radiative processes, fluid dynamics—and moving on to BH accretion physics, relativistic jets and the co-evolution of BHs and galaxies. Much of the physics treated in this course can be applied to massive binary BH systems.