Reminder: a review of highlights for Astro 2201…

Part I: “reading” the sky and the achievements of the Ancients
• the Celestial Sphere, the Ecliptic, apparent motions of the Sun, Moon and planets; solar and lunar eclipses
• Sizing up the cosmos: Eratosthenes, Aristarcos, Hipparcos
• Geocentrism and Heliocentrism: Aristoteles, Ptolemy, Copernicus
• Calendars and Timekeeping: what makes a good calendar? Sidereal or Solar?

Part II: the Moderns ➔ Galileo, Kepler, Newton
• Main Galilean discoveries
• Kepler’s laws of planetary motions
• The rise of modern science: what’s gravity? What’s a scientific theory?

Part III: Light, atoms and nuclei
• What is an isotope, a quantum of radiation, different names/kinds of radiation?
• What’s a “black body”? Radiation laws? What is Spectroscopy and why is it important in Astronomy?
Part IV: Telescopes and the Atmosphere
• Why so many kinds of telescopes? From the ground or from space?
• What is astronomical “seeing”, angular resolution, aperture synthesis, adaptive optics?

Part V: Stars
• What is a star, range of masses, sizes?
• How do we measure distances to stars?
• The HR diagram, the “Main sequence” or “spectroscopic distances”?
• What is the source of their radiative energy? The proton chain reactions? The CNO cycle? The triple-alpha chain? Fusion or fission? How are heavy elements produced?
• The mass to luminosity relation for stars in the main sequence
• The lifetime of stars in the main sequence and its dependence on mass

Part VI: Stellar Death
• Three kinds: white/black dwarfs, neutron stars, black holes
• What is electron/neutron degeneracy? Chandrasekhar mass limit
• How do we detect black holes?