

2 Week 02

2.1 Key concepts

- Escape velocity
- Circular velocity
- Kepler's 3 laws
- Conic sections
- Orbital period
- Classical orbital elements

2.2 Important concepts

- Gravitational well
- Gravitational field
- Coordinate systems
- Calendars & solar/sidereal days
- Orbital velocity
- Energy of the orbital motion

2.3 Relevant concepts

- Gravitational acceleration profile
- Relative motion in the 2-body problem
- N -body problem
- Flight path angle
- State vector

2.4 Advanced concepts

- Precession of the Earth
- The gravitational constant G and the Cavendish experiment
- Derivation of the shape of the orbits
- Mean and eccentric anomaly