

6th National Astronomy Olympiad 2019- Nepal

Syllabus

Senior Category

(For students of age between 15-20 years and currently studying at class 11 or 12 or equivalent)

- **Mechanics:** Newton's Laws of Motion; Gravitation; Circular Motion; Rotational Motion; Simple Harmonic Motion, Kepler's Laws of Planetary Motion
- **Heat and Thermodynamics:** Thermodynamic Equilibrium; Ideal Gas; Energy Transfer; Black Body Radiation
- **Nuclear Physics:** Atom; Hydrogen Spectrum; Nucleus and Radioactivity; X-Rays
- **Wave and Optics:** Light; Interference, Diffraction, Polarization; Microwave, Infrared, Ultraviolet, Gamma Rays, Visible Wavelength Bands; Optical Instruments; Doppler's Effect
- **Electricity and Magnetism:** Electromagnetic Theory; Magnetic Properties and Behavior
- **The Sun:** Solar Structure; Sun-Earth Relation; Solar Wind and Radiation; Eclipse
- **The Earth:** Atmosphere; Longitude and Latitude; Tides; Seasons; Meteor, Meteoroid, Meteorite; Aurorae
- **The Solar System:** Earth-Moon System; Planets, Dwarf Planets, Asteroids, Comets
- **The Stars:** Life Cycle; Neutron Star; Black Hole; Supernova; Constellation
- **Universe:** Galaxy; Dark Matter; Dark Energy; Hubble-Lemaître law and its Significance
- **Space Exploration:** Satellites; Human exploration and missions
- **Mathematics:** Basic statistics, Basic Trigonometry, Coordinate Geometry, Transformation, Polynomials, Circle, Ellipse, Hyperbola, Parabola

Note:

The first round selection (entrance exam) will be of two hours where students will be asked both subjective and objective questions from the above syllabus.

- For the two-hour 90 marks test, there will be 30 multiple choice questions (30x2=60 marks) and 3 long questions (3x10=30 marks)
- Application file itself consist of 10 marks (question in the application form=5 marks and SEE=5 marks)
- There will be no negative marking
- Students are allowed to use scientific calculators (non-programmable only)

For application form, submission guidelines and further details, please visit

www.nepalastronomicalsociety.org/olympiad