

Skill Course on Tools for Astrophysics	
Class: B.Sc. II	Skill level: 7
Name of Co-ordinator: Mr. S.D. Jituri	

Department of Physics and astrophysics

1. Title: **Skill Course on Tools for Astrophysics.**
2. Year of implementation: 2020-21

Structure

Skill level	Theory Hours	Practical Hours	Total Hours	Credits	No. of students in batch
7	20	30	50	03	30

Syllabus

Course Objectives: Students should to understand:

1. the advanced equipments and astrophysics softwares.
2. how to use Stellarium and Gadget 2 softwares.
3. telescope fabrication.
4. methods to measure distance.
5. parallax method for measurement of stellar distance.

Theory (20 Hrs)

Syllabus

Unit I: Astronomical Softwares (10)

Interesting objects in night sky, Software used for night sky observations: - Stellarium and various mobile applications, Introduction to useful simulation softwares for astrophysics.

Unit II: Telescope fabrication (10)

Various methods used to measure distance, Parallax method, Introduction to fabrication of telescope: - optical telescope and radio telescope.

Practical (24 + 6hr)**List of Experiments: (Any 8)**

1. Practice on handling of telescope.
2. Measurement skills on telescope.
3. Identification of constellations.
4. Practice on night sky observations using mobile application.
5. Observation skills for solar eclipse.
6. Practice on night sky observations using Stellarium application.
7. To draw the constellation maps.
8. Understanding solar spectrum.
9. Handling of prism spectrometer.
10. Handling of grating spectrometer.

Field visit**6 hr****Course Outcomes: After completion of the course, students are able to:**

1. get knowledge about telescope.
2. know computational astronomy.
3. understand working of prism and grating spectrometer.
4. understand methods to measure distance.

Recommended Books:

1. Astronomy Fundamentals & Frontiers by R. Jastrow, M. H. Thomson John Wiley & Sons Publications.
2. An Introduction to Astrophysics by Baidhnath Basu, 2nd edition (2014) PHI Learning Pvt. Ltd. New Delhi.

Syllabus Committee:

Mr. S.D. Jituri- Chairman
Mr. S. S. Patil

Expert Committee:

Dr. Adinath Funde
Mr. S. B. Yadav (Solar industrialist)