

The B.G.E. Society's

SHRI R. L. T. COLLEGE OF SCIENCE, AKOLA

Re-accredited with 'A' Grade by NAAC with CGPA 3.12



**DEPARTMENT OF PHYSICS &
INTERNAL QUALITY ASSURANCE CELL (IQAC)**



Conducting
"DIPLOMA COURSE IN ASTRONOMY"

Accredited by
Department of Lifelong Learning & Extension
Sant Gadge Baba Amravati University, Amravati.

ORGANIZERS

Shri S. R. Jaiswal
Course Coordinator

Dr. V. D. Nanoty
Principal/ Chairman

For More Details Contact to:

Shri Shailesh R. Jaiswal
(Coordinator)

Asst. Professor,
Department of Physics
Shri R. L. T. College of Science, Akola
(Mail ID: srjaiswal07@gmail.com)
Mob. No.: [8806070156](tel:8806070156)

Note:

- 1. For Admission Contact to Coordinator in Physics Department.**
- 2. Admission will start from 17 August 2022 and onwards.**
- 3. Certificate will be provided by the university after successful completion of the course.**

The objective of the course:

- To develop an interest in the field of astronomical science among students.
- To cultivate public awareness and appreciation of astronomy as a hobby and science.
- To motivate students for scientific study for higher education in the field of space and astronomy by performing simple projects.
- To develop the skill of how to design optical instruments so that students can start business/projects of astronomical instruments.

Details of the Physical Infrastructure to be provided for the course:

i) Classroom: Sufficient classrooms are available in the college for online and offline classes.

ii) Library: Books of Astronomy are available in our library

iii) Practical set:-

- A telescope "Sky watcher-8 inch flex Dobsonians (Newtonian reflecting telescope).
- Refractor Telescope
- Sextant
- Two Binoculars (7 X 50 and 7 X 35).
- Star Dials (English & Marathi).
- Green Laser Beam.
- Astronomical Model.
- Celestial Glob.

Course Details:-

Sr. No.	Course/subject/Units	Type of Theory/ Practical	Credits	Total Marks
1	History of Astronomy	PPT, VIDEOS Lectures	-	20
2	Sky and Coordinate system in Astronomy	PPT, VIDEOS Lectures	-	20
3	Sky observations at night	PPT, VIDEOS Lectures	-	20
4	Astronomical Instruments	PPT, VIDEOS Lectures	-	20
5	Theory Internal Assessment	Theory Attendance and overall Performance	-	20
5	Practical	Observatory and Hands-on Projects	-	200
	Total		-	300

Draft Syllabus

Unit I: History of Astronomy

(20 Marks)

- Pre-historic astronomy
- Early ideas of heavens
- Astronomy as a tool in everyday life and basis for religion.
- Contributions by ancient Hindu, Arabic, and Greek astronomers or thinkers like Ptolemy, Aryabhata, Varahmir, Nicolas Copernicus, Johannes Kepler, Galileo Galili, Tycho Brahe, Issac Newton, etc.

Unit II: Sky and Coordinate system in Astronomy (20 Marks)

- Aspect of the sky at a given place
- Sky conditions for astronomical observations
- Identification of some prominent stars in the night sky
- Spherical coordinate system.
- Latitude and longitude at a place on the earth.
- Celestial coordinate system (RA and Dec).
- Concept of celestial equator, elliptic, and equinoxes.
- Precession of equinoxes.
- Astronomical definition of time.
- Visual magnitude system for stars and planets.

Unit III: Sky observations at night (20 Marks)

- Ideal sky for astronomical observations.
- Constellation including Zodiac belt.
- Sky charts.
- Motion of the moon.
- Apparent motion of the sun.
- Motion of planets.

Unit IV: Astronomical Instruments (20 Marks)

- Sextant: Principle of working and its application for measurement of coordinates of stars and planets.
- Introductions about lenses and mirrors.
- Types of Telescopes, Constructions&Working, Handling the Telescope, Binocular, Telescope with a mobile camera.

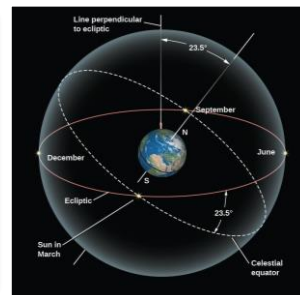
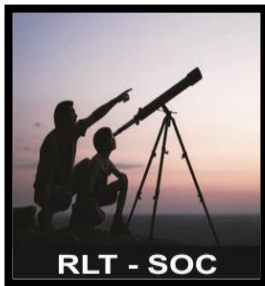
Practical Work: (200 marks)

The distribution of marks for practical-I & II will be as follows:

- Students must be performing **hands-on Projects**. (80 marks)
- Students give a Seminar on the selected hand-on projects and submit it report (20 marks)
- Students must be performing **observatory Projects**. (80 marks)
- Students give a Seminar on a selected observatory project and submit it report (20 marks)

Tentative Project List:

- Phases of the Moon
- Measuring the Diameter of the Sun
- The apparent motion of the sun
- Polari the north star/Ursa Major
- Planets and Planetary Systems
- Nebulas and Galaxy
- Mechanism of the Seasons
- Constellation including Zodiac belt
- Solar & Lunar eclipse
- Telescope Making
- Spacecraft
- Rocket Launcher
- Artificial Satellite





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ADMISSION NOTICE (2022-2023)

For **Diploma Courses**

Under

**Department of Lifelong Learning and Extension,
Sant Gadge Baba Amravati University, Amravati.**

Name of the Courses	Course Duration	Course Fees	Intake Capacity
Diploma Course in Astronomy	6 Month	1500	Min. 20
Diploma Course in Sericulture	6 Month	1500	Min. 20

- The course admission open for B.Sc.- I, II & III year and M.Sc.-I year admitted students in college.
- The admission will be confirmed only after payment of course fees in college.

For more details contact to course coordinators:

Shri S. R. Jaiswal – 8806070156 , Dr. Rashmi Joshi Sawalkar - 9923074666

Adv. M. G. Mohta
President
The B. G. E. Society, Akola.

Shri. P. N. Maheshwari
Hon. Secretary
The B. G. E. Society, Akola.

Dr. V. D. Nanoty
Principal
Shri R. L. T. College of Science, Akola.