

Introduction to Observational Astronomy

SCHEME AND SYLLABUS

Objectives

Enabling the students to observe and understand the night sky in a systematic and scientific manner with the help of a telescope and supporting equipment.

Tentative course schedule

July 2019

Course Fee

The fee per student is Rs.3000 for the course.

Maximum strength per batch: 20

Proposed minimum requirement for admission to the course

Bachelor's degree in Physics or course with physics as a subsidiary subject with more than 60 percent marks for Physics.

a. General scheme

The course consists of one theory paper and one practical paper. The theory paper consists of 20 hours of teaching. The practical paper consists of 10 hours of teaching.

b. Scheme of evaluation

For the theory paper, 25% marks will be set for continuous evaluation. 75% of the marks will be from the examination which is to be conducted at the end of the course.

The 25% of the internal evaluation will be distributed as follows:

Theory paper:

- | | |
|------------------|------|
| 1. Attendance | :20% |
| 2. Assignment(1) | :40% |
| 3. Test paper(2) | :40% |

Practical paper:

- | | |
|---------------|------|
| 1. Attendance | :20% |
| 2. Record | :40% |
| 3. Lab | :40% |

c. Attendance

The same marks will be awarded for all papers on the basis of the average attendance of the student concerned. The weightage for awarding marks for attendance shall be as follows:

Attendance	Marks
Below 70%	Nil
70% above but below 80%	50% of the total marks allotted for attendance
80% above but below 90%	75% of the total marks allotted for attendance
90% and above	Full marks allotted for attendance

d. Attendance shall be marked in every period and is consolidated at the department.

e. Test paper: A minimum of two tests shall be conducted of which the best shall count for internal evaluation.

f. Assignment: One assignment for the theory paper shall be done by the students.

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Scheme of work and evaluation

Paper	Paper code	Teaching hours		Paper for examination			Max. marks awarded per paper			Grand total
		Theory	Practical	Theory	Practical	Others	Internal	External	Total	
Paper I	OA101	20		OA101			25	75	100	200
Paper II	OA102		10		OA102		25	75	100	

PAPER: 1 – FUNDAMENTALS OF ASTRONOMY

Paper Code: OA101 (20 Hrs)

Module I: Basic knowledge of the sky (10 Hrs)

Astronomical coordinate systems – Temporal units – Magnitudes – Photometric systems and colors – Extinction, seeing and other real life complications – Astronomical catalogues – Astrometry

Module II: Basic astronomical instruments (10 Hrs)

Telescope designs: refractor telescope, Newtonian telescopes, Schmidt-Cassegrain telescopes – Fundamentals of CCD – Introduction to planetarium software: Stellarium

PAPER: 2 – PRACTICAL

Paper Code: OA102 (10 Hrs)

1. Measuring the distance to the moon w. a telescope
2. Measuring the diameter of the moon w. a telescope
3. Determining the period of a variable star
4. Charting out the sunspots
5. Using CCD camera to capture images of celestial objects