

Academic Council Meeting No. and Date : 03 / February 14, 2022

Agenda Number : 6

Resolution Number : 12 / 5.2



**Vidya Prasarak Mandal's
B. N. Bandodkar College of
Science (Autonomous), Thane**



Certificate Course
in
Astronomy and Astrophysics

With effect from
Academic Year 2022-2023

Certificate Course Astronomy and Astrophysics

CourseCode	Course Title	No. of lectures	Credits
BNBCCAP1T1	Astronomy and Astrophysics	27	3
BNBCCAP1P1	Practicals	18	

Syllabus of certificate

Course: Astronomy and Astrophysics

UNIT	SUB-TOPICS	Lect ures	Practi cal
I	<i>Introduction:</i> Mass, length and Time scales in Astrophysics, Celestial Coordinates, Magnitude scale, Sources of astronomical information, Astronomy in different bands of electromagnetic radiation, Astronomical nomenclature.	7	-
II	<i>Stellar astrophysics:</i> Introduction, Basic equations of stellar structure, A summary of stellar observational data, Main sequence, red giants and white dwarfs.	8	-
III	<i>End state of star collapse:</i> Introduction, Degeneracy pressure of a fermi gas, structure of white dwarfs. Chandrashekhar mass limit, the neutron drip and neutron stars, Pulsars, Binary X-ray sources. Accretion disks.	8	-
IV	<i>IRAF:</i> Introduction to CCD, Introduction to IRAF	4	18
Total		27	18

Evaluation Scheme

Theory Examination: Suggested Format of Question paper

Duration: 2 Hours

Total Marks: 50

All questions are compulsory

Q. 1	• Based on Unit I	10
Q. 2	• Based on Unit II	15
Q. 3	• Based on Unit III	15
Q. 4	• Based on Unit IV	10

Each question may have following sub questions

Short answer question

5 Marks

Short note questions

5 Marks

Practical Examination

Details	Marks	Viva	Journal	Total
Practical	40	5	5	50

Total of Theory Examination

50 Marks

Total of Practical Examination

50 Marks

Grand Total

100 Marks

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