Lecture Plan

Name of the College: Government College of Arts, Science and Commerce, Sanquelim - Goa

Name of Faculty: Ms. Hema Umesh Sawant	**Subject:** Geography	
Paper code & paper: GOG-131 & Astronomical Geography	**Program:** F.Y.B.Com.	**Division:**
Academic year: 2024-25	**Semester:** I	**Total Lectures:** 28

Course Objectives:

Astronomical Geography is an introductory course that provides a comprehensive overview of the science of astronomy in relation to Geography. The course covers the historical development of astronomy, celestial coordinates and time, the electromagnetic spectrum, imaging and spectroscopy, the Solar System, stars and stellar evolution, galaxies and cosmology, as well as special topics such as exoplanets, dark matter, dark energy and gravitational waves. Throughout the course, students will have opportunities to engage in hands-on activities and observations of the night sky.

Course Outcome:

- By the end of this course, students will be able to:

1. Explain the nature and scope of climate change and its historical context.
2. Identify the scientific evidence for climate change and the causes and consequences of this phenomenon.
3. Analyze the impacts of climate change on land, water, and the atmosphere.
4. Evaluate strategies for mitigating and adapting to climate change, including the role of science and technology, economic and political considerations, and international frameworks and agreements.
5. Apply geographic principles and concepts to analyze case studies of climate change impacts and responses, and to assess the social and economic

implications of climate change.

Student Learning Outcome:

By completing this course, students will be able to:

- Understand the basic concepts of astronomy and geography.
- Identify and describe the major celestial objects in the Solar System.
- Use celestial coordinates to locate objects in the sky.
- Observe and record astronomical phenomena.
- Appreciate the historical development of astronomy and its connection to geography.
- Develop a lifelong interest in exploring the universe.

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
July	15/07/2024	20/07/2024	02 per week	Introduction to Syllabus and Practical Format The Astronomy: Fundamental Concepts and Observational Astronomy	Students record their observations of the night sky, noting specific celestial objects or events.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)

July	22/07/2024	27/07/2024		Historical Perspectives and Role of the Astronomy	Ask students to identify constellations using star charts or apps.		Astronomy by Eric Chaisson and Steve McMillan(2017)
July	29/07/2024	31/07/2024		Relationship of Astronomy with Geography	Identify the latitude and longitude of specific locations on a map.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
August	01/08/2024	03/08/2024	2 lectures per week	Relationship of Astronomy with Geography	Use online resources to predict the next eclipse visible from their location. Use star charts to identify constellations and celestial bodies.	PPT Videos and Black Board	The Universe by Pearson
	05/08/2024	10/08/2024		Historical Development of Astronomy in Relation to Geography: Ancient Civilizations and Astronomical	Investigate significant astronomical discoveries throughout	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)

				Observations	history and their impact on society		
				Historical Development of Astronomy in Relation to Geography: The Age of Exploration and Astronomical Navigation			
	12/08/2024	17/08/2024		Historical Development of Astronomy in Relation to Geography: Modern Astronomy and Geographic Information Systems (GIS)	Write journal entries from the perspective of a historical astronomer or explorer, describing their observations, challenges, and discoveries.	PPT Videos and Black Board	
	19/08/2024	24/08/2024		The Solar System: Fundamental Concepts & Historical Development	Prepare for the ISA II: Written Test	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
	26/08/2024	31/08/2024		ISA II The Solar System: Future Explorations	Read more on The Solar System	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
September	02/09/2024	07/09/2024	2 lectures per week	The Sun and its Properties: Sun's Structure, Energy and Impact on the earth	Observe the activities happening due to the presence of sun.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
	09/09/2024	14/09/2024		The Sun and its Properties: Life Cycle and	Investigate the use of solar	PPT Videos and Black	Astronomy by Eric Chaisson and Steve

				Comparison with other stars.	energy as a renewable resource and its potential benefits and drawbacks.	Board	McMillan(2017)
	16/09/2024	21/09/2024		The Planets and their properties: Eight Planets & Planetary Properties	Draw a sketch of Solar System to understand the sequence.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
	23/09/2024	30/09/2024		Planetary formation and their evolution; exoplanets	write journal entries from the perspective of a space explorer, describing their observations and experiences on a distant planet.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
	01/10/2024	05/10/2024		Dwarf Planets & Asteroids	Read on the influence of asteroids in the solar system	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
October	07/10/2024	12/10/2024	2 lectures per week	Comets and Constellations	Draw a neat and clean sketch of comet structure.	PPT Videos and Black Board	Astronomy by Eric Chaisson and Steve McMillan(2017)
	14/10/2024	19/10/2024		Revision based on the		PPT & PDF	Astronomy by Eric

			syllabus covered			Chaisson and Steve McMillan(2017)
	21/10/2024	22/10/2024	Revision based on the syllabus covered			Astronomy by Eric Chaisson and Steve McMillan(2017)

Assessment Rubrics

Component	Max Marks
ISA 1	7.5
ISA 2	10
Practical	NIL
Project	15
Semester End Exam	60