

			Semester Plan						
	Name of the college: Government College of Arts, Science and commerce, Sanquelim- Goa.								
	Name of Faculty: Mr. Gandesh Gaonkar				Subject: Astronomical Geography				
	Paper code: GOG-131				Program: F.Y. BCOM		Division: B		
	Academic year: 2026- 2027				Semester: I		Total Lectures: 45		
	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.								
	Expected Course Outcome: By the end of the course, students will be able to: 1. Analyze and evaluate the interconnections between astronomy and geography, recognizing how astronomical knowledge informs geographic understanding and vice versa. 2. Compare and contrast the planets based on their properties, categorizing them into terrestrial (inner) planets and gas giants (outer) planets.								

	3. Define and classify galaxies, and discuss their formation and evolution. 4. Create and maintain a detailed field diary documenting observations of the night sky, including celestial events, object sightings, and personal reflections, to enhance understanding and analysis of astronomical observations.								
	Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books	
	July	08-07-2026	10-07-2026	03	Introduction to Astronomy: What is astronomy?	Students will list the celestial objects they observe in the sky during the day and at night.	Smart Board - Power Point Presentation	Hawking, Stephen. The Universe in a Nutshell. Bantam Books, 2001.	
	July	15-07-2026	17-07-2026	03	Relationship of Astronomy with Geography	Students will identify how astronomical phenomena such as the Earth's rotation, revolution, and the Sun influence geographical features and processes.	Smart Board - Power Point Presentation	Hawking, Stephen. The Universe in a Nutshell. Bantam Books, 2001.	

	July	18-07-2026	23-07-2026	04	Historical development of astronomy in relation to Geography		Smart Board - Power Point Presentation	Hawking, Stephen. A Brief History of Time. Bantam Books, 1998.	
	July	24-07-2026	30-07-2026	04	The Solar System	Students will arrange the planets in the correct order from the Sun and identify whether they are terrestrial or giant planets.	Smart Board - Power Point Presentation	Greene, Brian. The Elegant Universe. Vintage Books, 2000	
	August	05-08-2026	07-08-2026	03	The Sun and its properties.		Smart Board - Power Point Presentation	Greene, Brian. The Elegant Universe. Vintage Books, 2000	
	August	08-08-2026	14-08-2026	04	The planets and their properties, Dwarf planets, asteroids, comets and constellations	Students will prepare a comparison table showing the properties of the eight	Smart Board - Power Point Presentation	Greene, Brian. The Elegant Universe. Vintage Books, 2000	

						planets, dwarf planets, asteroids, comets, and constellations with suitable examples.			
	August	17-08-2026	21-08-2026	03	Types of stars, Stellar properties and life cycle Star clusters and their properties	Students will prepare a flowchart illustrating the life cycle of a star and identify the different types of stars and star clusters with suitable examples.	Smart Board - Power Point Presentation	Greene, Brian. The Elegant Universe. Vintage Books, 2000.	
	August	22-08-2026	28-08-2026	04	Galaxies and Cosmology, Types of galaxies	Students will identify the Milky Way Galaxy and compare it with other major types of galaxies based on their shape, size, and structure.	Smart Board Power Point Presentation	Kuhn, Thomas S. The Structure of Scientific Revolutions. University of Chicago Press, 1962.	
	September	02-09-2026	07-09-2026	04	Formation and evolution of galaxies, The Big	Students will prepare a simple	Smart Board	Kuhn, Thomas S. The Structure of Scientific	

					Bang and the expanding universe	timeline illustrating the major stages in the evolution of the Universe.	Power Point Presentation	Revolutions. University of Chicago Press, 1962.	
	September	09-09-2026	12-09-2026	03	Formation and evolution of galaxies, The Big Bang and the expanding universe		Smart Board Power Point Presentation	Kuhn, Thomas S. The Structure of Scientific Revolutions. University of Chicago Press, 1962.	
	September	21-09-2026	24-09-2026	03	Exoplanets and the search for life, Dark matter and dark energy	Students will participate in a group discussion on the topic "Is There Life Beyond Earth?" and list the factors that make a planet suitable for life.	Smart Board Power Point Presentation	Tyson, Neil deGrasse. Death by Black Hole: And Other Cosmic Quandaries. W.W. Norton & Company, 2007.	
	September	25-09-2026	30-09-2026	03	The naked eye and telescopes during prevailing season		Smart Board Power Point Presentation	Tyson, Neil deGrasse. Death by Black Hole: And Other Cosmic Quandaries. W.W. Norton & Company, 2007.	

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