

DEPARTMENT OF GEOGRAPHY

Category I

(B.A. Honours in Geography in three years)

SEMESTER-IV

DISCIPLINE SPECIFIC CORE COURSE – OCEANOGRAPHY (DSC 10)

Course title & Code	Credits	Duration (Hrs per week)			Eligibility Criteria	Prerequisite
		Lecture	Tutorial	Practical/ Practice		
OCEANOGRAPHY	4	3	1	0	Class 12th	NIL

Learning Objectives:

The Learning Objectives of this course are as follows:

- To enable the learner to understand the basics of oceanography.
- To enable the learner to explain the configuration of the ocean bottom
- To enable the learner to discuss ocean water and its unique ecosystem
- To equip the learner to appreciate and elaborate the problems and policies for sustainable oceans
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Learning Outcomes:

The Learning Outcomes of this course are as follows:

- The students would be able to comprehend and establish the relationship between human action and global ocean conditions. They would be able to explain the ocean as a regulator of global climate.
- Illustrate the dynamic ocean bottom topography and appreciate the circulation of cold and warm Ocean currents.
- Discuss the salinity and temperature distribution of ocean water on a three-dimensional spatial perspective.
- Elaborate the marine ecosystems as well as explain the problems and address the policies to resolve them.

Course Outline:

UNIT 1: Introduction to Oceanography: (8 hrs)

- Significance of Oceanography, Human actions and the Oceans, Challenges to Sustainability of Marine Ecosystems, Role of Sea surface Temperature (SST) as Global Climate Regulator

UNIT 2: Geomorphological Oceanography: (8 hrs)

- Ocean Bottom Topography – Relief of Ocean Floor with Global examples

UNIT 3: Physical and Chemical Oceanography: (9 hrs)

- Properties of Ocean Water: Salinity and Temperature (Horizontal and Vertical Distribution); Oceanic currents

UNIT 4: Biological Oceanography: (10 hrs)

- Marine Ecosystems: Coral Reef, Mangrove, Open and Deep Sea

UNIT 5: Sustainability of Oceans- Problems and Policies: (10 hrs)

- Marine Challenges and Management, Marine Policy: Integrated Coastal Zone Management (ICZM) with reference to India and SDG 14; Life Below Water

Readings

- Basu S.K. (2003). Hand Book of Oceanography. Global Vision, Delhi.
- Davis, R. J.A. (1996). Oceanography: An Introduction to the Marine Environment. Brown Co, Iowa.
- Garrison, T. (2016). Oceanography: An Invitation to Marine Science. 9th ed, Cengage Learning, Boston.
- Lal. D.S. (2003) Oceanography. Sharada Pustak Bhavan, Allahabad.
- Pinet, P.R. (2014). Invitation to Oceanography. 7th ed, Jones and Barlett Publishers, Burlington.
- Sharma, R. C. and Vatal, M. (2018) Oceanography for Geographers. Surjeet Publications, Delhi.
- Singh, S. (2015). Oceanography. Pravalika Publication, Allahabad,
- Sverdrup K. A. and Armstrong, E. V. (2008). An Introduction to the World Ocean. McGraw Hill, Boston.

Readings (Hindi)

- Gautam, A. (2005) Jalwayu Evam Samudra Vigyan. Rastogi Publication, Meeruth.
- Kulshrestha, K.P. (2004). Samudra Vigyan. Kitab Ghar, Kanpur.
- Singh, S. (2015). Samudra Vigyan. Pravalika Publication, Allahabad.
- Tiwari, R. K. (2016). Bhautik Bhugol. Rajsthan Hindi Granth Academy, Jaipur.