

**DEPARTMENT OF GEOLOGY**  
in association with

**IQAC**

of

**KABI JAGADRAM ROY  
GOVERNMENT GENERAL**

**DEGREE COLLEGE**

**MEJIA, BANKURA**

**Organises**

**CERTIFICATE COURSE ON**

**ANTARCTICA:  
EXPLORING A  
CONTINENT OF  
WONDERS**



## **COURSE DETAILS**

**Course Duration: 10days**  
**(21.10.2024-30.10.2024)**

**Course Fee: NIL**

**Participants:** Interested  
under graduate students  
of all the disciplines are  
invited to join.

**Registration Link :**

**<https://forms.gle/7hhHiyEEiswh4tKC9>**



**Patron:**

**Sri Aloke Kumar Das**  
(Officer-in-Charge)

**Vice-Patron:**

**Dr. Aresh Kumar Maji**  
(IQAC Co-ordinator &  
HOD, Department of Geology )

**Course Co-Ordinator:**

**Indrani Mondal**  
Assistant Professor of Geology

**Joint Co-Ordinator:**

**Dr. Nivedita Chakraborty**  
Assistant Professor of Geology

## COURSE DETAILS

**Course duration:** From 21/10/2024 to 30/10/2024; ten days (35 hours)

**Participants:** Interested under graduate students of all the disciplines are invited to join.

**Patron:** Sri Alope Kumar Das (Officer-in-Charge)

**Resource persons:** To be notified

**Course fee:** Nil

**Assessment process:** Written Examination,  
Attendance

## COURSE SCHEDULE

Unit No.	Title	Duration (Hours)
1 (Introduction to Antarctica)	Understanding Antarctica	2hrs
	Origin of Antarctica	3hrs
	Landscape and ecosystem	3hrs
2 (Exploration and Discoveries)	Early Voyages, Discoveries and Antarctic Exploration:	4hrs
	Scientific Expedition and Research	6hrs
3 (Wonders and Challenges)	Climate Issues	4hrs
	Antarctica and Life	2hrs
	Tourism and Future Prospect	2hrs
	Experience shared by Antarctic persons	4 hrs
Written Exam		1 hr
Evaluation		2hrs
Distribution of participation certificate+ Valedictory		2hrs
		35 hours

## **COURSE CONTENT**

### **Module 1: Introduction to Antarctica:**

Module Description: The "Introduction to Antarctica" module serves as an entry point for learners to explore the geography, geology, climate, and significance of Antarctica. Through this module, participants will gain foundational knowledge about the southernmost continent, its unique features, and its role in global environmental systems.

#### **Understanding Antarctica:**

- Overview of Antarctica's geographic location, size, boundaries climate, and physical characteristics
- Introduction to landmarks of Antarctic
- Introduction to the climate and weather patterns of Antarctica
- Discussion on the significance of Antarctica as a continent and its role in regulating global climate systems

#### **Origin of Antarctica:**

- Exploration of Antarctica's geological history and formation
- Plate tectonics and the breakup of Gondwana: How Antarctica became a separate landmass

#### **Landscapes and Ecosystem:**

- Overview of geological features such as mountains, glaciers, and ice shelves
- Flora and Fauna of Antarctica; exploration of Antarctica's rich wildlife, including penguins, seals, whales, and seabirds
- Overview of the unique adaptations of Antarctic animals to survive in extreme conditions
- Importance of Antarctic Ecosystems

### **Module 2: Exploration and Discovery**

Module Description: The "Exploration and Discovery of Antarctica" module offers participants a comprehensive journey through the history of Antarctic exploration, from the earliest voyages of discovery to modern scientific expeditions. Through a blend of historical accounts, multimedia presentations, and interactive discussions, learners will gain insights into the challenges, triumphs, and enduring legacy of Antarctic exploration.

#### **Early Voyages, Discoveries and Antarctic Exploration:**

- Overview of early attempts to explore and discover Antarctica
- Exploration of the Heroic Age of Antarctic Exploration (late 19th to early 20th century)

- Exploration expeditions led by notable explorers such as Scott, Amundsen, and Shackleton
- Motivations and challenges faced by early explorers in their quest to reach the southernmost continent and survive in Antarctica's harsh environment

### **Scientific Expeditions and Research:**

- Overview of scientific expeditions and research conducted in Antarctica during the 20<sup>th</sup>-21<sup>st</sup> century
- Discussion on the establishment of research stations and the development of Antarctic science programs
- Exploration of key discoveries and breakthroughs in fields such as geology, glaciology, oceanography, and biology

### **Module 3: Wonders and Challenges:**

Module overview: This module aims to provide a comprehensive overview of the wonders and challenges of Antarctica, covering its unique environment, scientific significance, human presence, environmental threats, cultural aspects, and future prospects. Each session combines lectures, discussions, and interactive activities to engage participants and deepen their understanding of Antarctica's complexities.

#### **Antarctica and Life:**

- Historical overview of human exploration and scientific research in Antarctica.
- Challenges of Living and Working in Antarctica
- Indigenous Peoples and Cultural Significance of Antarctica

#### **Climate Issues in Antarctica**

- Climate Change and Its Impact on Antarctica
- Melting Ice: Environmental Consequences and Global Implications
- Wildlife Conservation Efforts in Antarctica
- Threats to Antarctic Ecosystems: Pollution, Invasive Species, and Overfishing

#### **Tourism and future prospect in Antarctica**

- Tourism in Antarctica: Opportunities and Challenges
- Future Prospects for Antarctica: Environmental Protection and Sustainability

#### **Suggested Reading:**

- ❖ Scott and Amundsen: The Last Place on Earth, Roland Huntford
- ❖ Race to the South Pole, Roald Amundsen
- ❖ Forgotten Footprints: Lost Stories in the Discovery of Antarctica, John Harrison
- ❖ Natural History of the Antarctic Peninsula, Sanford Moss
- ❖ Antarctica (Bengali Edition) by Sudipta Sengupta (Author)
- ❖ Antarctica: Life on the Frozen Continent (Wonders of Our Planet) by Conor Kilgallon
- ❖ Pilgrims on the Ice: Robert Falcon Scott's First Antarctic Expedition by T. H. Baughman
- ❖ <https://discoveringantarctica.org.uk/>

A Certificate Course  
on  
**Antarctica: Exploring A Continent of Wonders**

(21/10/2024 - 30/10/2024) (Hybrid Mode)

Organized by,  
Department of Geology  
Kabi Jagadram Roy Government General Degree College, Mejia, Bankura-722143

**Time Table**

**Meeting link for Online Classes:** <https://meet.google.com/hkj-sabh-fcf>

❖ <b>Inauguration- 21.10.2024; 2:00 P.M (Offline mode)</b>					
<ul style="list-style-type: none"> <li>➤ Welcome Address by Dr. Asesh Kumar Maji (IQAC Co-ordinator and Head, Geology)</li> <li>➤ Address by Shri Alope Kumar Das (Officer-in-Charge)</li> <li>➤ Address by Dr. Goutam Dey (NAAC Co-ordinator)</li> </ul>					
SL No.	Resource Person	Title	Mode of session	Date	Time
1.	Dr. Anupam Sharma (Scientist G; Birbal Sahni Institute of Palaeosciences (BSIP)) <a href="mailto:anupam.sharma@bsip.res.in">anupam.sharma@bsip.res.in</a>	Introduction to Antarctica	Online	21.10.2024	3:00-5:00 PM
2.	Prof. Susanta K. Samanta (Professor & HOD; Department of Geological Sciences, Jadavpur University) <a href="mailto:susantak.samanta@jadavpuruniversity.in">susantak.samanta@jadavpuruniversity.in</a>	Journey to the bottom of the Earth	Online	22.10.2024	2:30-4:30 PM
3.	Dr. Binita Phartiyal (Scientist F; Birbal Sahni Institute of Palaeosciences (BSIP)) <a href="mailto:binita_phartiyal@bsip.res.in">binita_phartiyal@bsip.res.in</a>	Part 1: Poles-Antarctica -Scientific Scope, Challenges and Opportunities	Online	23.10. 2024	11:00 AM-1:00 PM
		Part 2: Evolution of landscape and climatic variations in the Schirmacher Oasis, East Antarctica during Holocene.	Online	23.10. 2024	1:30-3:30 PM
4.	Prof. Sugata Hazra (Retired Professor, School of Oceanographic Studies, Jadavpur University) <a href="mailto:sugata.hazra@gmail.com">sugata.hazra@gmail.com</a>	Fire on the Icescape: My observations on Antarctica	Online	24.10.2024	11:30 AM-1:30 PM
5.	Shri Roshan Kumar Malik (Senior Geologist; Polar Studies Division, Geological Survey of India, Faridabad-121001) <a href="mailto:rosan.mallik@gsi.gov.in">rosan.mallik@gsi.gov.in</a>	Geological and Geochemical Evolution of Schirmacher Oasis, East Antarctica in the Context of cDML Pan-African and Grenvillian orogeny	Online	24.10.2024	6:00-8:00 PM
6.	Dr. Shabnam Choudhary (Scientist; National Institute of Oceanography, Goa) <a href="mailto:cshabnam@nio.res.in">cshabnam@nio.res.in</a>	Climate Issues, Antarctica and Human, and Tourism	Online	25.10.2024	11:00 AM-1:00PM
7.	Shri Rosan Kumar Mallik (Senior Geologist; Polar Studies Division, Geological Survey of India, Faridabad-121001) <a href="mailto:rosan.mallik@gsi.gov.in">rosan.mallik@gsi.gov.in</a>	Antarctica Exploration Through ages and Indian Contribution in the Scientific advancement special reference to GSI.	Online	26.10.2024	11:00 AM-12:30 AM
		Indian Antarctic Law, Environmental Obligations, sustainability and Early Career Opportunities for young researchers.			1:00-2:30 PM

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**Time Table**

**Meeting link for Online Classes:** <https://meet.google.com/hkj-sabh-fcf>

SL No.	Resource Person	Title	Mode of session	Date	Time
8.	Dr. Punarbasu Choudhury (Associate Professor and HOD, Department of Environmental Science, Calcutta University) <a href="mailto:punarbasu_c@yahoo.com">punarbasu_c@yahoo.com</a>	Indian Antarctic Mission: Retrospect and Prospect	offline	27.10.2024	11:00 AM- 1:00 PM
					1:30-3:30 PM
9.	Dr. Satya Chanakya (Scholar, IISC Bangalore) <a href="mailto:ilindrac@iisc.ac.in">ilindrac@iisc.ac.in</a>	Exploring the Unknown: The Science and Significance of Expeditions	Online	28.10.2024	11:00 AM- 1:00 PM
10.	Ms. Reeya Ghosh (Research Scholar, NIT Durgapur) <a href="mailto:reeyaghosh92@gmail.com">reeyaghosh92@gmail.com</a>	A Journey to the frozen Frontier: Rise of sustainable tourism in Antarctica	Offline	28.10.2024	1:30-3:00 PM
11.	Nilesh Kumar Meshram (Research Scholar, NIT Durgapur)	Antarctica: A Geographical and Environmental overview	Offline	28.10.2024	3:30-5:00 PM
12.	Dr. Shilpa Srimani (Scholar, Jadavpur University) <a href="mailto:shilpa.srimani@gmail.com">shilpa.srimani@gmail.com</a>	Sedimentation history of Antarctica: A window to look through the Planet Earth	Online	29.10.2024	11:00 AM- 1:00 PM
13.	Dr. Supriyo Kumar Das (Assistant Professor; FRP, Department of Geology, Presidency University) <a href="mailto:sdas.geol@presiuniv.ac.in">sdas.geol@presiuniv.ac.in</a>	Overview of the unique Adaptations of Antarctic Life to survive in extreme condition	Online	29.10.2024	2:00-4:00 PM
<b>❖ Closing ceremony (offline mode) on 30.10.2024</b> <ul style="list-style-type: none"><li>➤ Written Examination (Short type question/MCQ of 50 Marks)- 11.30 AM-12.30 PM</li><li>➤ Evaluation- 1:00 PM-3:00PM</li><li>➤ Certificate distribution (3.30 PM onwards)</li><li>➤ Valedictory (4:30 PM)</li></ul>					