

ROCK, MINERAL & FOSSIL MUSEUM

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Introduction

The Rock, Mineral & Fossil Museum of the Department of Geology, Nimapara Autonomous College, is a dedicated repository of geological specimens established to strengthen practical instruction in mineralogy, petrology, and palaeontology. Housed within the department building and clearly marked by departmental signage at its entrance, the museum brings together rock, mineral, ore, and fossil specimens systematically arranged on open display shelving for study by undergraduate and postgraduate students. It functions as both a teaching aid and a permanent scientific record, allowing direct correlation between textbook classification schemes and real hand specimens.

Geologically, the museum spans the three principal rock classes — igneous, sedimentary, and metamorphic — together with associated economic minerals, ores, and index fossils, giving students a working reference collection that mirrors the classification systems taught in the core Geology curriculum (mineralogy, optical petrology, sedimentology, structural geology, and stratigraphy).



Igneous Rock Collection

Specimens include granite and pegmatite (coarse-grained, plutonic, quartzo-feldspathic), gabbro and diorite (intermediate to mafic plutonics), and basalt, rhyolite, andesite, obsidian, and pumice (fine-grained to glassy volcanics). These illustrate the full spectrum of silica content, cooling rate, and textural variation — phaneritic versus aphanitic — central to igneous petrology.

Sedimentary Rock Collection

Clastic and chemical sedimentary types on display include sandstone, shale, conglomerate, and breccia (clastic, grain-size based classification), alongside limestone, chert, and coal (chemical/organic origin). These specimens support the study of depositional environments, sorting, and diagenesis.

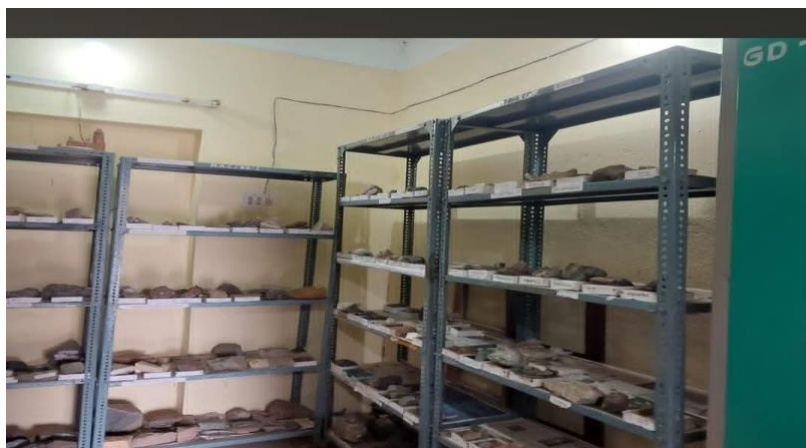
Metamorphic Rock Collection

The metamorphic suite — marble, quartzite, slate, phyllite, schist, gneiss, and amphibolite — is arranged to demonstrate progressive metamorphic grade, from low-grade slate through to high-grade gneiss, illustrating foliation development and mineral recrystallisation under increasing temperature and pressure.

Mineral, Ore & Fossil Collections

The mineral collection covers major rock-forming and accessory minerals — quartz, feldspar, mica, calcite, gypsum, fluorite, garnet, hornblende, and olivine — used to teach physical properties such as cleavage, hardness, lustre, and crystal habit. A parallel ore mineral section houses hematite, magnetite, bauxite, chromite, galena, chalcopyrite, sphalerite, and pyrolusite, connecting the museum to economic geology and India's mineral resource base.

The fossil section preserves index and body fossils — ammonites, trilobites, brachiopods, corals, gastropods, bivalves, and plant fossils — each significant for biostratigraphic correlation and reconstruction of past depositional and biological environments. Every specimen shelf carries individual identification labels recording specimen name and, where documented, locality — the basis of the department's specimen catalogue.



Museum Layout and Special Displays

Specimens are organised on tiered metal and wooden shelving, grouped by category with labelled cards for quick identification during practical classes. A dedicated corner features portraits of eminent geoscientists and a hand-built relief model depicting a volcanic eruption, river system, and dam — used to teach physical geology and geomorphology concepts such as landform evolution and surface processes. Blue display cabinets near the entrance house polarizing microscopes used for optical mineralogy alongside compact reference specimens.



Educational and Research Value

- Hands-on identification of rocks, minerals, ores, and fossils, reinforcing mineralogy and petrology coursework
- Practical preparation for university examinations and competitive tests (GATE/NET/CSIR in Earth Sciences)
- Reference base for student projects, dissertations, and comparative petrological study
- A visual teaching aid for stratigraphy, structural geology, and geomorphology through maps, charts, and models
- Preservation of field-collected specimens for use by future batches of students

Specimen Categories at a Glance

Category	Representative Specimens
Igneous Rocks	Granite, Basalt, Gabbro, Diorite, Pegmatite, Rhyolite, Andesite, Obsidian, Pumice
Sedimentary Rocks	Sandstone, Limestone, Shale, Conglomerate, Breccia, Chert, Coal
Metamorphic Rocks	Marble, Quartzite, Slate, Schist, Gneiss, Phyllite, Amphibolite
Minerals	Quartz, Feldspar, Mica, Calcite, Gypsum, Fluorite, Garnet, Hornblende, Olivine
Ore Minerals	Hematite, Magnetite, Bauxite, Chromite, Galena, Chalcopyrite, Sphalerite, Pyrolusite
Fossils	Ammonite, Trilobite, Brachiopod, Coral, Gastropod, Bivalve, Plant Fossils

This collection makes the museum a compact, comprehensive geological reference facility, translating classroom concepts in mineralogy, petrology, economic geology, and palaeontology into direct, specimen-based learning.