

DEPARTMENT OF GEOLOGY

FACULTY OF SCIENCE

M.Sc. In Geology

Prospectus and Admission Guidelines
2023-2024



THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA



VADODARA-390002, GUJARAT, INDIA



H. H. Maharaja Sayajirao Gaekwad-III

MISSION STATEMENT

**Vision and mission as perceived by
H. H. Maharaja Sayajirao Gaekwad-III**

***“The progress of a nation requires that its people should be educated. Knowledge is a necessity of man. It instills in him a desire to question and to investigate, which leads him on the path of progress. Education, in the broadest sense, must be spread everywhere. Progress can only be achieved by the spread of education. Cooperation is necessary to achieve any worthy end and this readiness to cooperate will not be found in people if they are not educated.*”**

About Department of Geology

The Department of Geology was established in the year 1951 initially in the Faculty of Technology and Engineering with limited staff and equipments with undergraduate teaching. The present venue of the Department in the Faculty of Science was established in 1965 by **Prof. S. S. Merh** with full-fledged undergraduate, postgraduate courses and research programmes in varied disciplines of Geology. An extension wing was added in 1987. At present, there are 6 faculty members in the Department. The Department is offering B.Sc., M. Sc. and certificate courses. Since its inception, more than 150 students have completed their Ph.D. and 13 students are working at present for their Ph.D. The research students include those fellowships from CSIR, major research projects and also from ONGC, GSI, ISRO, PRL and state government departments.

The Department is well known nationally and internationally for high-quality teaching and cutting edge research particularly in the areas of Quaternary Geology, Palaeoclimatology, Geomorphology, Neotectonics, Sedimentology, Metamorphic Petrology, Paleontology, Ichnology, Palaeohydrology and Remote sensing. The majority of the teaching staff are actively pursuing their research with the help of funding from the Department of Science and Technology (DST), Ministry of Earth Science, ONGC, AMD, ISRO, UGC and others. Over the years, the Department has gained a reputation as a major contributor to the frontline research in Earth Science in the country. All staff members are well known for producing high-quality research which is published and cited in reputed national and international journals.

FACULTIES OF THE DEPARTMENT

PROF. A. V. JOSHI HEAD & PROFESSOR



A message from the Head

The Department of Geology at The Maharaja Sayajirao University of Baroda is one of the oldest established departments of western India. It is the centre of excellence and learning fundamental and advanced levels of geological sciences and has attracted students from different parts of the country and the world. The department offers courses at undergraduate and post graduate levels with curriculum equivalent to the national level competitive examinations. With advanced instrumentation facilities available and well qualified teaching faculty the department is known for carrying out doctoral research at national and international levels. The department has been receiving grants for research and infrastructure developments from national funding agencies. Along with teaching and research, the department also plays a key role in the overall growth and development of the students.

PROF. B. S. DEOTA PROFESSOR



PROF. D. A. SANT PROFESSOR



PROF. D. M. MAURYA PROFESSOR



PROF. S. J. PATEL PROFESSOR



PROF. M. A. LIMAYE PROFESSOR



STRENGTHS

The Department has traditionally maintained a vibrant atmosphere of teaching and research. The main strength of the Department is the well qualified and highly distinguished faculty. The staff members are well known for their research work in their respective fields. The Department also has several laboratories and state of art equipment for carrying out teaching and research. The syllabus of the various courses are periodically upgraded in line with contemporary trends and needs. This is reflected in the large number of students qualifying in GSI, NET, GATE, SET and other competitive examinations. The students also get placed regularly in several reputed government and private organizations.

TEACHING AND LEARNING PROCESS ON CAMPUS

Geology has always been an interesting and alluring subject, which attracts students in large numbers. For students opting for Geology, we have adopted the modern world techniques of rapid communication and knowledge dispersal by providing opportunities for active participation of the students. Field based practical knowledge is given priority. Sincere efforts are continuously made for creating additional infrastructure to bring about quality changes in the existing facilities to upgrade the standard of teaching.

INFRASTRUCTURE

The Department is housed in three storied building along with an extension wing. All staff members are provided with individual rooms in addition to the laboratories. The Department has well equipped laboratories with sophisticated instruments, several lecture rooms with audio-visual facilities and computer room with internet facility for staff and students. Specialized laboratories with advanced instruments which include Sedimentology lab, Geochemistry lab, Remote Sensing lab, Advanced Optical lab and Micropaleontology lab. The Department also has advanced field equipments like GPR, GPS, Resistivity meter and fieldwork camping facilities. The Department also has a well-furnished Seminar room and library. A centralized canteen facility of the Faculty of Science for students is located adjacent to the Department.

RESEARCH

The Department is known for producing high-quality research publications in reputed national and international journals. All staff members have excellent academic credentials and are recognized for guiding research students. Some of the staff members possess very high citation index, a reflection of the high quality research being carried out in the Department. Some of the aspects of research being actively pursued by the staff members of the Department are as follows.

- a) Quaternary climatic and Hydrogeological changes in Western India.*
- b) Evolution of Coastal plains and sediment disposal system along Gulf of Cambay and Kachchh.*
- c) Geometry and nature of active faults in Gujarat.*
- d) Evolution of Great and little Rann of Kachchh using subsurface cores.*
- e) Environmental conditions during late Quaternary in the Nal-Bhal corridor.*
- f) Structural and metamorphic history of the Aravalli Group of rocks of NE Gujarat.*
- g) Ichnological and Sedimentological studies of Mesozoic and Cenozoic sequences in Gujarat.*

Facilities

Lab Facilities

1. **Geochemistry Lab**
2. **Micropaleontology Lab**
3. **Paleontology Lab**
4. **Petrology and Petrography Lab**
5. **Remote Sensing and GIS Lab**
6. **Sedimentology Lab**

Other Facilities

1. **Departmental Library**
2. **Museum with Rock, Mineral and Fossil Specimens**
3. **Thin section preparation unit**

Instrumentation Facilities

1. **Scanning Electron Microscope (SEM) and Energy Dispersive X-Ray Analyzer (EDX)**
2. **Sedigraph**
3. **Atomic Absorption Spectrophotometer (AAS)**
4. **Differential Thermal Analysis(DTA)/ Thermogravimetry Analysis(TGA)**
5. **Ground Penetrating Radar (GPR)**
6. **Magnetic Susceptibility measuring instrument**
7. **High magnification Leica Microscope**
8. **Binocular Microscope**
9. **Optical Microscope**

INSTRUMENTATION FACILITIES

SCANNING ELECTRON MICROSCOPE



GROUND PENETRATING RADAR



SECTION CUTTER



MAGNETIC SUSCEPTIBILITY MEASURING INSTRUMENT



SEDIGRAPH



ATOMIC ABSORPTION SPECTROPHOTOMETER



Activities

The Department of Geology of The M. S. University of Baroda annually celebrates IGNITE festival under the banner of the Geological Society which is formed by the students, for the students of the department. They also actively participate in the Science fair which is held in the faculty of Science on Science day every year. The research scholars engage themselves diligently in National and International Conferences, Seminars and Research Programmes.

Alumni

The alumni of the Department of Geology forms an active group and are well placed in reputed organizations of the country. Some illustrious alumni are

- 1. Prof. S.S. Merh- Founder, Department of Geology*
- 2. Dr. S. R. Nayak- Former Secretary, Ministry of Earth Sciences, New Delhi*
- 3. Dr. R. A. Chansarkar- Former Director, DRDO, New Delhi*
- 4. Prof. D.R. Gadekar- Ex-Head, Department of Geology, UGC member, Ex-Vice Chancellor,
Dr. B. R. Ambedkar University, Lucknow*
- 5. Dr. K. L. N. Rao- Former Director, Western Onshore Basin, ONGC Ltd. - Vadodara*
- 6. Dr. S. Srinivasan- Former ED, Exploration, ONGC Ltd. - Dehradun*
- 7. Prof. L.S. Chamyal - National Geoscience Awardee, Ex-Head, Department of Geology*

ADMISSION PROCEDURE

The application form is to be filled online only. A student willing to apply for more than one MSc Program should submit separate application for each and **the application form fee in such cases will have to be paid separately for each course/program.** The students who have applied and fulfill the criteria of **minimum qualifications for eligibility** can appear in the entrance examination. **A written Entrance Test will be conducted for deciding admission to each Programme. The admissions will be strictly based on the merit of marks obtained in written Entrance Test.**

INTAKE CAPACITY: 36 SEATS

ELIGIBILITY CRITERIA

The admission is based on the merit of entrance test only. To appear in **entrance test**, following **eligibility criteria** is to be fulfilled:

1. A student with B. Sc. or an equivalent degree (10+2+3 pattern of education) in the relevant subject from a university in any state or Union Territory of India or a global University/ Education Institution recognized by The Maharaja Sayajirao University of Baroda is eligible. The minimum marks/ grade points in qualifying examination shall be as follows:
 - i. **For general category candidates**
50% or equivalent grade points (considering all the three years).
 - ii. **For SC/ST candidates**
Must have passed qualifying examination.
 - iii. **For SEBC candidates**
45% or equivalent grade points for applicants from Gujarat and 50 % or equivalent grade points for applicants from other states and Union Territories in India.
2. Candidates who have **appeared for final year of the qualifying examination** may also apply and appear in the Entrance Test. However, their admission will be confirmed only on the submitting original marksheet of the qualifying examination and fulfillment of eligibility requirement, at the time of Admission.

CRITERIA FOR CASTE-WISE RESERVATION AND OTHER QUOTA

Government of Gujarat rules for the reservation quota will be applied: SC: 7%, ST: 15%, SEBC: 27%, General: 51%. All original certificates should be produced at the time of document verification and admission.

If any relevant certificate is not produced at the time of admission, the student will NOT be considered for particular reservation category.

A student, irrespective of her/his reservation category, for admission, will be first considered for GENERAL category.

- a) The **SC and ST students of other than the Gujarat state** should produce a certificate from competent authority of Government of Gujarat if their original certificate DO NOT indicate that their caste / Tribe is recognized under such category in Gujarat also.
- b) The **SEBC category** are required to produce a valid **non creamy layer certificate** from competent authority.
- c) There will be **10 %** supernumerary seat (**additional seats over and above the total number of seats**) reservation of the total seats for **Economically Weaker Sections (EWS)**. Within this 10% quota, **33%** seats shall be further sub-reserved for female students belonging to the same Economically Weaker Sections.
- d) **Reservation for physically disabled students: 5%** seats of the total seats (to be included under each different category with in the limit of total reservation under a particular reservation category like SC/ST/SEBC/GEN) are reserved for the persons with benchmark disability in accordance with the provisions of the section 32 of the rights of persons with Disabilities ACT, 2016. They should produce a **current/recent year certificate of Civil Surgeon** stating the type of disability, extent (%) of disability and state (Progressive/ non-progressive) of disability. Only those students who have **minimum 40% disability** are eligible to be considered for the reservation.
- e) **Reservation for Defense & Ex/In- Servicemen: 1%** seats of the total seats (to be included under each different category with in the limit of total reservation under a particular reservation category like SC/ST/SEBC/GEN) are reserved for wards of Defense & Ex/In-Servicemen.
- f) **Reservation for Kashmiri Migrants: 1% supernumerary seat reservation quota**

(Additional seats, **NOT** included under each different category with in the limit of total reservation under a particular reservation category like SC/ST/SEBC/GEN).

- g) **Advantage to Sports Persons: Please note that the benefit to sports persons is granted ONLY if the student has participated/ awarded medals in State level or higher-level competitions.**
- i. Students who participated at State level: **3%** marks to be added to their eligibility marks
 - ii. Students who won medal at State level or participated at National level: **5%** marks to be added to their eligibility marks
- Students who have won medal at National level or participated / won medal at International level: to be granted **Direct admission**.
- h) **Reservation for wards of MSU Staff: 01% supernumerary seat reservation quota** (Additional seats, **NOT** included under each different category with in the limit of total reservation under a particular reservation category like SC/ST/SEBC/GEN) **only in Regular Payment Fee Category** for the wards of the permanent or temporary employees of The Maharaja Sayajirao University of Baroda. They should produce relevant documents at the time of admission.
- i) If the **seats remain vacant** after stipulated admission rounds in the SC or ST reservation categories, then these seats can be **interchanged** among SC and ST.
- j) **After granting admission to all the students of any reserve category on respective reserve seats, if the reserved category seats remain vacant then these seats shall be transferred to General (Unreserved) category seats.**

Supernumerary seats which remain vacant shall NOT be transferred to any other category.

Admission Fees is to be paid through online mode only.

CASH/CHEQUE OR ANY OTHER MODE OF TRANSACTION NOT ACCEPTED

INSTRUCTIONS TO THE CANDIDATES

1. **The admissions will be strictly based on the merit.** Just fulfilling the eligibility criteria DOES NOT GUARANTEE admission.
2. The admission to the course is PURELY TEMPORARY and subjected to various scrutiny till the unique Permanent Registration Number (PRN) of the candidate is generated.
3. **If the information provided by the candidate is incorrect or if any unfair**

practice is followed or the candidate is unable to submit any of the required certificates in the stipulated time period, his/ her admission is liable to cancellation.

4. **Maintenance of Stipulated Attendance of Students (Ordinance 183)** The following shall be the minimum attendance necessary:
 - a. In a semester an overall attendance of **at least 75%** of the number of lectures delivered and tutorials, seminars etc. arranged in all subjects, provided the total attendance in each of the subjects offered is **at least 60%**.
 - b. In a semester an overall attendance of **at least 80%** of the days allotted for practical classes and laboratory work in each subject.
5. General rules governing the conduct of students in the university:
 - i. A student must do nothing either inside or outside the University that will interfere with its orderly working and discipline.
 - ii. This comprehensive rule covers most cases that are likely to arise. It forbids:
 - a. Impolite or unseemly behavior in classroom or University premises during working hours of the College and the Faculty.
 - b. Attempt to persuade other students to abstain themselves from regular classes.
 - c. Damage to or defacement of University furniture, fittings and property.
 - d. Disobedience of notifications or instructions issued by the Principals/Deans/Heads of the Departments and Members of the staff duly authorized.
 - iii. As per UGC regulation, stipulated attendance (Ordinance 183) is required for permitting students to appear for final examination. If unavoidably absent on account of health, urgent private affairs, or other reasons, they must be prepared to state the exact reason for absence.
 - iv. Students are expected to behave with courtesy towards the members of the staff, their fellow students, and all visitors to the Institution.
 - v. Sexual harassment will lead to severe punishments like suspension, rustication from the University / College/ Institution. Disciplinary action is as prescribed under The M. S. University of Baroda rules.
 - vi. Ragging is prohibited on MSU Campus, ragging is a criminal offence and

is liable to severe punishment, including suspension, rustication, and imprisonment.

vii. **Compulsory Thalassemia Blood Screening:** Thalassemia blood testing is made compulsory by Government of Gujarat. Final Eligibility of any student for admission to any course to this University will be granted ONLY after she/ he submits report of the Thalassemia blood screening. Students are encouraged to get the test done and submit the report at the time of Admission. Those students who already have a Thalassemia Test Report done earlier, need not get it done again. They can submit copy of earlier report.

GRADE POINT SYSTEM

- A system comprising of 7 grade points (4 to 10) will be followed for evaluating a candidate in every course. Both mid-semester and end-semester exams are counted for final grade points.

Grade Points	Description	Percentage of Marks	Division/Grade	Range
10	Outstanding	90% - 99%	First / O	Above 9.01
9	Excellent	80% - 89%	First / A	8.01 – 9.00
8	Very Good	70% - 79%	First / B	7.01 – 8.00
7	Good	60% - 69%	First / C	6.01 – 7.00
6	Fair	50% - 59%	Second / D	5.01 – 6.00
5	Average	40% - 49%	Pass / E	4.01 – 5.00
4 – 0	Dropped	Below 40%	F	Below 4.00

CGPA	Class
CGPA < 4	Fail
4 = CGPA < 5	Pass Class
5 = CGPA < 6	2nd Class
6 = CGPA < 7	1st Class
CGPA ≥ 7	Distinction

Grade Point Average = $\sum (\text{Credit} \times \text{Grade Point}) / \text{Total Credits}$

AWARD OF CLASS

Marks-sheets of semester I to III of M. Sc. will simply indicate result as either Pass or Fail or ATKT but not the class which will be indicated in the last Semester mark sheet.

Cumulative Grade Point Average (CGPA) is computed as:

CGPA = $\sum (\text{Semester credits} \times \text{GPA}) / \text{Total Semester Credits}$

The sum is taken over from Sem-I to Sem-IV for M. Sc.

CRITERION FOR M.Sc. DEGREE AWARD

For obtaining M.Sc. degree in any subject, a candidate has to earn minimum 100 credits in all during the Programme.

Website: www.msubaroda.ac.in

The M. S. University of Baroda Admission Portal:
admission@msubaroda.ac.in

The information contained herein is for general guidelines only.

For further information contact Faculty Administration:

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“The full-blown lotus growing out of the lake symbolises the emergence of the mind and its triumph over matter. The flame rising from the center of the lotus is the flame of the human knowledge, spreading light and learning for the coming generations. The motto inscribed below the lotus defines the purpose and existence of life which is love of beauty, goodness, and intellectual curiosity.”

महाराजा सयाजीराव विश्वविद्यालय गीत

अमे वडोदराना विद्यापीठना सपना सारवनारा
अमे ज्योत जलावी सृष्टी नवली सहसा सर्जनहारा.

अमे गगमकुसुम कर धरनारा
अमे मगन मगन थई फरनारा
अगन बाथ अमे भरनारा
अमे दैन्यतिमिरने हरनारा.

श्री सयाजी विद्यापीठना ज्ञानदीपने धरनारा
सत्यं शिवं सुन्दरम् नो मंत्र अनंतर भणनारा.

शय्याजीराव