



DEPARTMENT OF MATHEMATICS

M. SC. IN MATHEMATICS

PROSPECTUS AND ADMISSION GUIDELINES 2021 (ONWARDS)



**FACULTY OF SCIENCE,
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA,
VADODARA – 390002**

<https://msubaroda.ac.in/Academics/Department>



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 instils 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.

MESSAGE FROM HEAD OF THE DEPARTMENT



Welcome to the DST – FIST supported Department of Mathematics at Faculty of Science, The Maharaja Sayajirao University of Baroda. Since its inception in nineteen-thirties in the Baroda College, the Department has been offering B. Sc. and M. Sc. programs in Mathematics. With the establishment of the University in 1949, the Department of Mathematics catered the teaching needs of many Faculties including Arts, Commerce, Home Science, Management Studies, Technology & Engineering and the Polytechnic in addition to the Science Faculty

Our department is one of the best – known departments in India for its highly acclaimed, dynamic, and modern teaching. Department offers B.Sc., M.Sc. and Ph. D. courses in Mathematics and is one of the rarest departments in India offering B. A. in Mathematics course. Since 1958, Department is recognized nationally and internationally for excellent research in the various fields of Mathematics. We have dedicated staff who, through local and international collaboration, keep abreast of new development in Pure Mathematics as well as Applied Mathematics. Several faculty members serve on the editorial boards of national and international journals, review research articles for journals regularly.

Department has a Library supported by the National Board for Higher Mathematics (DST, DAE, GOI) consisting of advanced level textbooks, research monographs, and journals. Also, there are two Computer Laboratories housing about 45 computers for conducting practical both at undergraduate and postgraduate levels and one well-equipped Seminar room. All faculty rooms, classrooms, laboratories, department office and seminar room are connected digitally by LAN. Also, staff members and students have accessibility to the Wi – Fi facility.

The academic training provided to the students helps them to flourish both academically and professionally in their career. For instance, many of our students are either pursuing their researches or are teaching in various national / international institutions / universities.

The Department website provides an overview of the academic programs, research activities, profiles of faculty members, and details of student activities. If you have further questions after browsing the website, please do not hesitate to contact us.

Come and join our department to contribute in the development of our nation in general and society in particular, by acquiring academic and proficient training.

Best wishes,

Rajendra G. Vyas,
Professor and Head,
Department of Mathematics,
Faculty of Science,
The Maharaja Sayajirao University of Baroda, Vadodara – 390 002.
Gujarat. India.
Email (HOD): head-math@msubaroda.ac.in

ABOUT THE DEPARTMENT

DST – FIST Supported Department of Mathematics at the Faculty of Science of The Maharaja Sayajirao University of Baroda is known for its quality teaching. Department is also actively engaged in researches in Analysis, Classical Harmonic Analysis on the Euclidean space, Function Spaces, Special Functions, Topology, Dynamical Systems, Classical General Relativity, Orbital Mechanics and Fluid Mechanics.

As early as in nineteen-thirties the B. Sc. and M. Sc. programmes in Mathematics were being offered in the Baroda College under the Leadership of Professor Pendse. After the establishment of the University in 1949, Professor S. D. Manerikar, a Senior Cambridge Wrangler, was appointed as the first Head of the Department of Mathematics. The Department catered to the teaching needs of Arts Faculty, Commerce Faculty, Home Science Faculty, Faculty of Management Studies, Faculty of Technology & Engineering and the Polytechnic in addition to the Science Faculty. Conscious efforts were made to establish Mathematics Department from the very beginning. In the early fifties, Professor P. R. Masani from Bombay, Professor S. M. Shah from Aligarh and Professor N. M. Shah were on the Board of Studies in Mathematics and under their direction, a course on “Modern Algebra” was introduced at the graduate level as early as in 1954 and several teachers were deputed for advanced study/research to different places. To initiate researches in Mathematics, the Vice-Chancellor Dr. (Smt.) Hansa Mehta, the Dean, Professor N. M. Bhatt and Professor S. M. Shah took initiative and invited Professor U. N. Singh, D.Sc. (Paris), to join the Department in January 1958.

Our department was first in the Gujarat State to introduce way back in 1975, job-oriented courses like Operations Research, Linear Programming, Computer Programming and Numerical Analysis at the undergraduate level and subsequently at the postgraduate level under the headship of Professor V. M. Shah. Our department is the first in the Gujarat State to introduce in 2006, an optional paper of “Application of Mathematics in Finance and Insurance” at the undergraduate level.

There is a Departmental Library supported by the National Board for Higher Mathematics (DST, DAE, GOI) consisting of advanced level textbooks, research monographs, and journals. Department has two Computer Laboratories consisting of about 50 computers used for practical both at undergraduate and postgraduate levels. The Department also has a well – equipped Seminar room.

Our student’s achievement record is healthy. Several students have cleared UGC–CSIR NET, GATE, GSLET, GPSC and other competitive examinations. Our students have also been selected for pursuing researches in the recent past at various Institutes and organizations such as The Indian Institute of Mathematical Sciences at Chennai, The Indian Statistical Institute at Calcutta, Tata Institute of Fundamental Research at Mumbai. HRI at Allahabad, DRDO and various IIT’s. Our student’s performance is outstanding at various National/State Mathematical Competitions. Many of our students have also been awarded NBHM research fellowships. Department has organized successfully many national/ international level conferences, seminars, workshops and training programs.



Computer Lab - 2



Computer Lab - 1



Computer Lab - 2



Computer Lab - 1



U. N. Singh Seminar Room



Maths - 11 Classroom



U. N. Singh Seminar Room

RESEARCH THRUST AREAS

Department members are actively engaged in researches in various fields of Mathematics and are publishing their research outputs in several international/national reputed journals. The quality researches done by the department members have also earned them prestigious research prizes, several visits abroad for carrying out post-doctoral research projects and a prestigious UGC career award in Mathematics.

ANALYSIS

Researches in Analysis began with the advent of Professor U.N. Singh in 1958 and since then many workers in the Department have produced a good amount of quality research work in the study of the Fourier Series. While the work on general Trigonometric Fourier Series, in connection with the convergence and summability problems, is noteworthy; in the area of Lacunary Fourier Series, the Department has put in significant research work regarding the problems of their absolute convergence, a study of properties of Fourier coefficients and convergence and summability problems not only in the setting of circle group but currently in the setting of totally disconnected compact abelian groups as well. Recently, Fourier coefficient properties of Fourier Series, Walsh Fourier Series and Vilenkin Fourier Series of functions of various generalized bounded variations of one variable as well as of several variables have been studied.

FACULTIES WORKING IN ANALYSIS

1. Professor R. G. Vyas
2. Dr. B. L. Ghodadra

SPECIAL FUNCTIONS

Since 1973 the department is actively engaged in researches in the field of Special Functions. The research work done and being done cover varied topics such as Hypergeometric functions and associated polynomial systems, Appel's functions, H-functions, G-functions of polynomial sets and their q-analogues. Recently, significant work has been carried out in the study of generalized Mittag-Leffler function. Certain inverse series inequality relations, differential equation, fractional derivatives and integration etc. have been obtained. A new class of Special Functions are introduced and various properties have been derived. The p-deformed generalized hypergeometric polynomials and their basic analogues have been defined and studied.

FACULTIES WORKING IN SPECIAL FUNCTIONS

1. Professor B. I. Dave

TOPOLOGY & DYNAMICAL SYSTEMS

It is more than 25 years that the Department is actively working towards researches in Topology. The work going on in topology can broadly be classified into the two areas: Dynamical systems, Compactifications and Projective objects. Researches in the dynamical system are mainly focused on the topological aspect. Various kind of dynamical properties was extended and successfully studied for continuous maps / homeomorphisms defined on non-compact, non-metrizable spaces. Also, many of dynamical properties have been studied for \mathbb{Z}^d -actions on compact metric spaces. Work is also being done in the areas of G-spaces, uniform spaces, studying dynamical properties of maps including that of uniform limit maps and time-variant maps.

FACULTIES WORKING IN TOPOLOGY & DYNAMICAL SYSTEMS

1. Dr. Ekta Shah
2. Dr. Sejal Shah

CLASSICAL GENERAL RELATIVITY & ORBITAL MECHANICS

Another field of interest in the Department, where the research work is going on is the Classical General Theory of Relativity (GTR) and Orbital Mechanics. GTR is the geometric study of gravitation. One of the important problems in GTR is to find exact solutions to Einstein's field equations. Work is being done to study anisotropic matter distributions in general relativity on the background of geometrically significant spacetimes such as paraboloidal and pseudo-spheroidal spacetimes. Mathematical models representing fields of superdense stars like pulsars and quark stars are being constructed. In orbital mechanics, study of periodic, quasi – periodic as well as halo orbits about Lagrangian points and their stabilities are studied numerically and analytically.

FACULTIES WORKING IN GTR

1. Professor V. O. Thomas

FLUID DYNAMICS, MHD FLOWS

Department is actively engaged in researches in Fluid Dynamics, particularly for the solutions of the problems arising in Fluid Flow through Porous Media. Efforts for the analytical solutions of important phenomenon like Fingering, Imbibition, Ground Water Seepage are also in progress. The Impact of non-linear radiation on different nanofluids with different geometries and the impact of chemical reaction on Maxwell Nanofluid is also studied.

FACULTIES WORKING IN FLUID DYNAMICS, MHD FLOWS

1. Professor Haribhai R. Kataria
2. Dr. C. Sravanthi



FRACTIONAL DERIVATIVES & APPLICATIONS

Fractional calculus has been used to model physical and engineering processes, which are found to be best described by fractional differential equations. It is worth noting that the standard mathematical models of integer – order derivatives, including nonlinear models, do not work adequately in many cases. In the recent years fractional calculus has played a very important role in various fields such as mechanics, electricity, chemistry, biology, economics, notably control theory, and signal and image processing. So fractional derivative can be used for modelling distributed parameter system.

Application fractional calculus to real world problem is only four decades old even it has long history because due to high complexity and lack of physical and geometric interpretation of fractional derivative. Extensive study of qualitative property like existence and uniqueness of the solution of fractional order differential equations are carried out.

FACULTIES WORKING IN FLUID DYNAMICS

1. Professor Haribhai R. Kataria



RESEARCH FACILITIES

The necessary tools to support researches in Mathematics include books, computers and softwares, journals. The Department has two computer laboratories with about 50 computers and a licensed version of MATLAB software. Every faculty in the Department has computer with latest configuration. Department has a Library sponsored by the National Board for Higher Mathematics (DST, DAE, GOI) which houses about 2491 books. These books include textbooks, research monographs and journals. Also, the central Library of the University (Smt. Hansa Mehta Library) is subscribing various journals in Mathematics.

ACHIEVEMENTS

FACULTIES

POST – DOCTORAL FELLOWSHIPS AWARDED:

1. Dr. Ekta Shah

- ∞ Visited Department of Mathematics, Faculty of Natural Sciences, Matej Bel University, Banska Bystrica, Slovakia under the National Scholarship Programme of Slovak Republic from March 01 – July 31, 2011.
- ∞ Awarded Post – Doctoral Fellowship of C. R. Rao Advanced Institute of Mathematics, Statistics and Computer Science for three years starting from August 01, 2011. (Due to some personal reasons could not avail this scholarship)

2. Dr. Bhikha Ghodadra

- ∞ Visited Bolyai Institute, University of Szeged, Szeged, Hungary, Between April 1 to May 15, 2014, under Indo-Hungarian Educational Exchange Programme during the Year 2013-2014 sponsored by the Hungarian Scholarship Board, Budapest, Hungary and the University Grants Commission, New Delhi, India.
- ∞ Visited Bolyai Institute, University of Szeged, Szeged, Hungary, between May 16, 2017 to June 15, 2017, for one month, under “State Scholarship grant award -- academic year 2016/17” supported by the Tempus Public Foundation (TPF), Budapest, Hungary.
- ∞ Selected by the Tempus Public Foundation (TPF), Budapest, Hungary under “Bilateral Scholarship” to visit Visited Bolyai Institute, University of Szeged, Szeged, Hungary, for one month during 2019/2020 and planning this visit from May 1 to 31, 2020. (Due to COVID-19, I had to cancel this visit.)

ACHIEVEMENTS CONTINUED....

COLLABORATORS (INTERNATIONAL / NATIONAL):

1. **Professor R. G. Vyas**

- ‡ Dr. Anil Kumar Gupta
Head, Department of Computer Science and Applications,
Barkatullah University, Bhopal.

2. **Professor Haribhai R. Kataria**

- ‡ Professor M. Sheikholeslami
Department of Mechanical Engineering, Babol Noshirvani University of
Technology, Babol, Iran.

3. **Professor V. O. Thomas:**

- ‡ Dr. Elbaz I. Abouelmagd
Celestial Mechanics and Space Dynamics Research Group(CMSDRG),
Astronomy Department, National Research Institute of Astronomy and
Geophysics, Helwan, Cairo, Egypt.
- ‡ Dr. Vineet K. Srivastava
Flight Dynamics Group, ISRO Telemetry Tracking and Command Network,
Bangalore.

4. **Dr. Ekta Shah**

- ‡ Professor Ali Barzanouni
Department of Mathematics, School of Mathematical Sciences, Hakim Sabzevari
University, Sabzevar, Iran
- ‡ Professor Lubomir Snoha
Department of Mathematics, Faculty of Natural Sciences, Matej Bel University,
Banska Bystrica, Slovakia.

5. **Dr. Bhikha Ghodadra**

- ‡ Dr. Vanda Fülöp,
Department of Analysis, Bolyai Institute, Faculty of Science and Informatics,
University of Szeged, Szeged, Hungary.

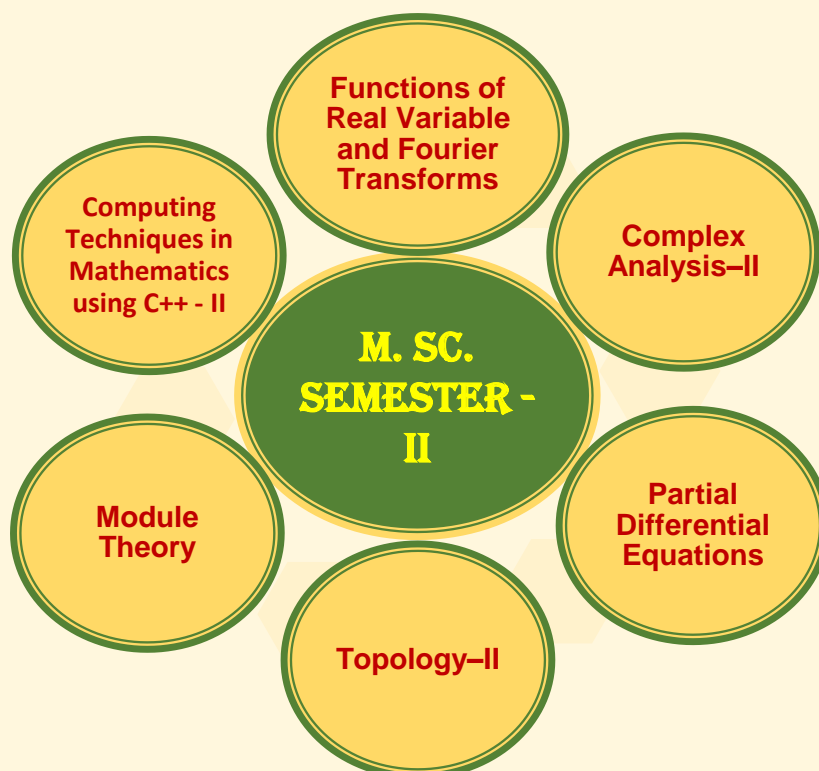
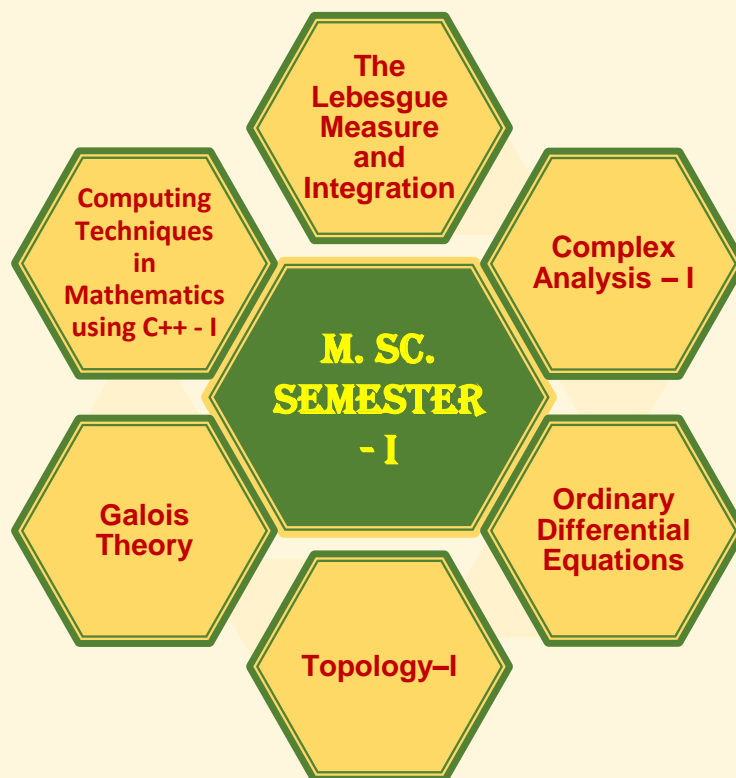
ACHIEVEMENTS CONTINUED....

STUDENTS

- ❖ About 25 students have cleared UGC – CSIR NET examination in last five years whereas about 15 students have cleared G – SLET examinations.
- ❖ Apart from clearing several competitive examinations, many of our students have cleared GATE, JAM, GPSC.
- ❖ Many of our students are doing researches in various Institutes and universities across the country. For instance, students are doing their Ph. D. in IIT Bombay, HRI Allahabad, IISER Bhopal, IMSc Chennai.
- ❖ Also couple of our students are selected for their Ph. D. course in foreign countries.
- ❖ Our student's performance is outstanding at various National/State Mathematical Competitions.
- ❖ One of our M. Sc. student Dr. Dishant Pancholi is awarded the prestigious Shanti Swarnar Bhatnagar Prize in Mathematics in 2019.
- ❖ One of our students is recently selected for her post postdoctoral work at TIFR Mumbai.
- ❖ One of our students is serving as a Flight Lieutenant in Indian Air Force.
- ❖ Many of our students are teaching in several colleges / universities / institutes across the country.
- ❖ Many of our students are working in various sectors such DRDO, TCS, MGVCCL, software companies, etc.
- ❖ One of our past students is working as Senior IOS developer at PayPal, USA and is involved in developing apps for different apple products.

COURSE STRUCTURE FOR M. SC.

M. Sc. in Mathematics at the Department of Mathematics, Faculty of Science is 100 credits course. Following is the semester – wise course structure:



**M. SC.
SEMESTER - III**

**(5 COMPULSORY +
2 ELECTIVES)**

COMPULSORY COURSES:

Advanced Linear Algebra
Functional Analysis – I
Advanced Calculus and Curve
Theory
Complex Analysis – III
MATLAB Practical

ELECTIVE COURSES:

Algebraic Number Theory	Fourier Analysis – I
Classical Mechanics – I	Operations Research - I
Special Functions – I	Topological Dynamics
Special Theory of Relativity	Homotopy Theory
Ergodic Theory	Topological Vector Spaces

**M. SC.
SEMESTER - III**

**(3 COMPULSORY +
3 ELECTIVES)**

COMPULSORY COURSES:

Calculus of Variation and
Integral Equations
Functional Analysis – II
Surfaces and Manifolds

ELECTIVE COURSES:

Matrix Groups	Fourier Analysis – II
Classical Mechanics – II	Operations Research - II
Special Functions – II	Chaos Theory
General Theory of Relativity	Homotopy Theory
Symbolic Dynamics	Cryptography
Homology Theory	Banach Algebras
Problem Solving Techniques in Mathematics - II	

DISTINGUISHED VISITORS (INTERNATIONAL)

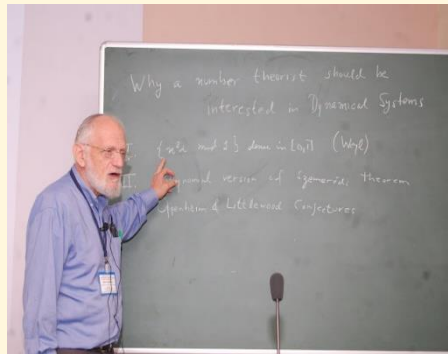
About 50 renowned professors from several international institutes and universities visited our department including the following:



**Professor Elon Lindenstrauss,
Einstein Institute of Mathematics,
Israel
(2010 Fields Medallist)**



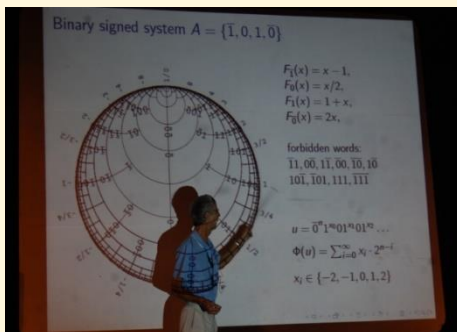
**Professor Wellington De Melo, Instituto
Nacional De Matematica Pura E Aplicada,
Brazil**



**Professor Hillel Furstenberg,
The Hebrew University of Jerusalem,
Israel**



**Professor Benjamin Weiss,
Einstein Institute of Mathematics,
Israel**



**Professor Petr Kurka,
Charles University in Prague, Czech Republic**



**Professor Keonhee Lee,
Chungnam National University, South Korea**



**Professor Sergei Pilyugin,
St. Petersburg University, Russia**



**Professor Lubomir Snoha,
Matej Bel University, Slovakia**

DISTINGUISHED VISITORS (NATIONAL)

- ✚ Professor M. S. Raghunathan, NCM, IIT Mumbai
- ✚ Professor H. P. Dixit, Fellow of National Academy of Sciences
- ✚ Professor S. G. Dani, IIT Bombay, Powai
- ✚ Professor V. Kannan, University of Hyderabad, Hyderabad
- ✚ Professor Satya Deo Tripathi, Harish-Chandra Research Institute, Allahabad
- ✚ Professor Ravi Rao, TIFR, Mumbai
- ✚ Professor S. D. Adhikari, Harish-Chandra Research Institute, Allahabad
- ✚ Professor A. K. Nandakumaran, IISc, Bangalore
- ✚ Professor A. S. Vasudeva Murthy, TIFR, Bangalore
- ✚ Professor A. P. Singh, Central University of Rajasthan, Kishangarh
- ✚ Professor S. Kumaresan, University of Hyderabad, Hyderabad
- ✚ Professor A. J. Jayanthan, Goa University, Goa
- ✚ Professor M. N. Mehta, SVNIT, Surat

ALUMINA'S OF THE DEPARTMENT



Dr. Dishant Pancholi,
Awarded of the prestigious Shanti Swarup Bhatnagar Prize in Mathematics in 2019.



Pooja Sharma,
Flight Lieutenant in Indian Air Force

- π Professor Dimplekumar Chalishajar, Virginia Military Institute, Lexington, Virginia, USA.
- π Dr. Bhavin Moriya, Departamento de Matematica, Universidade Federal de Viçosa, Vicoso, Minas Gerais, Brazil.
- π Dhara Shah, Graduate Research Assistant, Evidence – Based Cyber Security Research Group, Atlanta, USA.
- π Satish Vaidhya, Director, Business Solutions, BrainWave Labs, Pune, India.

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: 83 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 recognised 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 Defence & 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 Defence & 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 behaviour 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.

- (vi) **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

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

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:

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

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:

Professor Haribhai Kataria
Dean, Faculty of Science
E-mail: dean-science@msubaroda.ac.in

Dr. R N Jadeja
Dean of Students
E-mail: deanstudents-science@msubaroda.ac.in

Ms. Shilpa Gupta
Dean of Sports
E-mail: deansports-science@msubaroda.ac.in

Dr. Rupal Shah, Dr. Dharmendra Shah
Teacher Supervisors
E-mail: ts-science@msubaroda.ac.in

Dr. M N Srinivas
Coordinator, Sir C V Raman Block
E-mail: unitcordinator-science@msubaroda.ac.in

Ms. Bharati M Pamnani
CBCS Coordinator
E-mail: cbcscordinator-science@msubaroda.ac.in

Mr. K M Damor
Office Superintendent
Ph: 0265 2795329 (office)
Mob: 8141332160 (during office hours only)

MISSION OF THE DEPARTMENT

To train the students to extend their intellectual capacities by inculcating the habit of critical reading, critical thinking and problem solving through effective teaching, learning and evaluation.

To encourage the faculty to strive to contribute to the discipline of Mathematics by fundamental research in pure and applied Mathematics.

VISION OF THE DEPARTMENT

To provide learning environment with opportunities.

To prepare for lifelong learning by developing in them discipline, computational skills critical thinking problem solving ability.

To promote quality and excellence in faculty members through professional activities and access to academic research.

UNIVERSITY SONG



“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.

श्री सयाजीराव