



**Ahmedabad
University**

Master of Science

**QUANTITATIVE
ECONOMICS**



About Ahmedabad

Established in the year 2009 by the Ahmedabad Education Society, Ahmedabad University was set up as an institution with a thrust on rigorous academic pursuit with a focus on building inquiry as a value through a platform of interdisciplinarity, experiential learning, and research thinking. The University prepares students to think deeply and creatively across fields, and emerge as independent thinkers and compassionate leaders who can innovatively engage with the complex challenges of our society. Our research and teaching include humanities and languages, social sciences, mathematical and physical sciences, biological and life sciences, performing and visual arts, engineering, and management. The National Assessment and Accreditation Council of India (NAAC) has accredited Ahmedabad University with an 'A' grade in the year 2022.

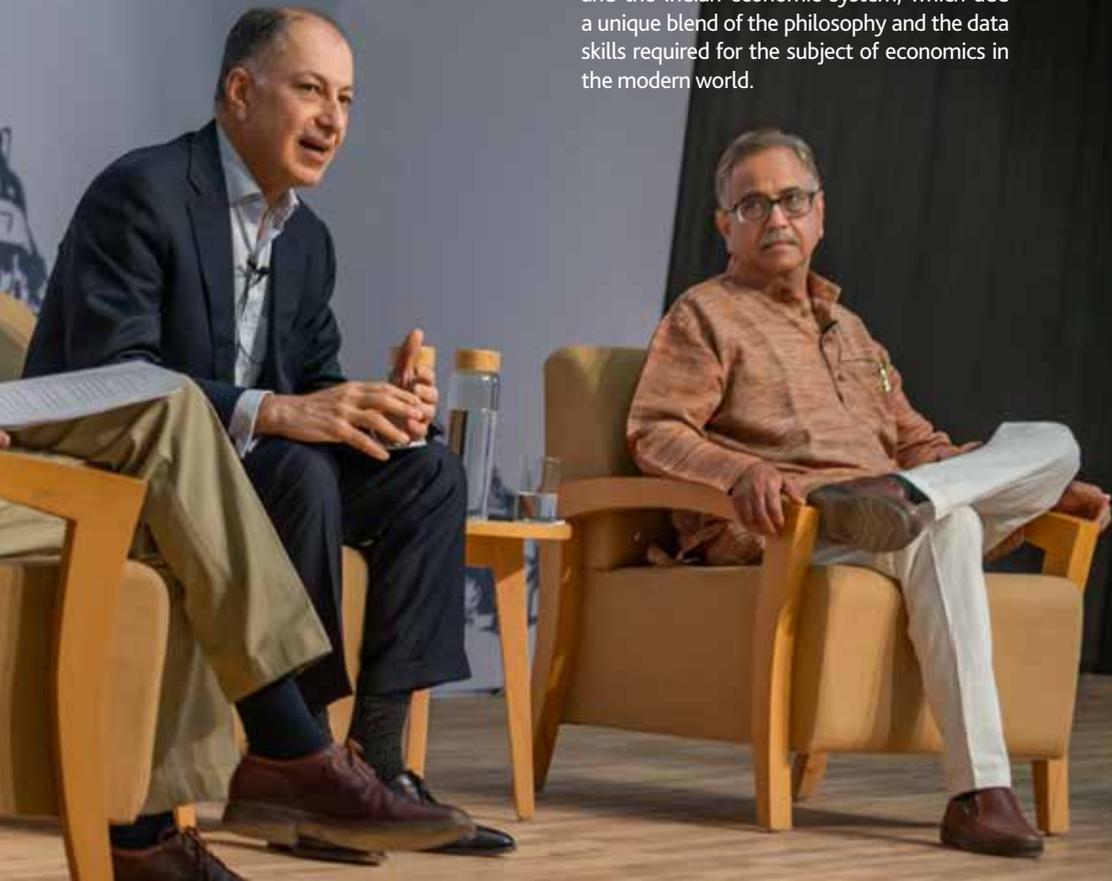
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About Amrut Mody School of Management

The Amrut Mody School of Management is committed to offering world class and contemporary management education with a strong emphasis on honing the skill set of students. The School creates a fitting environment that equips students with relevant managerial, analytical, interpersonal, and communication skills. The School boasts of a faculty with an unmatched mix of academic and industry experience and thus offers an ideal ecosystem for a holistic development of the student.

Masters Programme in Quantitative Economics

A two-year fully residential programme in Quantitative Economics with a focus on contemporary quantitative methods including artificial intelligence and machine learning in big data which are becoming necessary skills for a modern-day economist. The Programme also includes history of economic thought and the Indian economic system, which add a unique blend of the philosophy and the data skills required for the subject of economics in the modern world.



Philosophy of the Programme

Social and economic problems in real life are changing rapidly, thereby requiring new economic solutions through data and technology. To fill this gap, this Programme offers Artificial Intelligence, Machine Learning, and Experimental Methods, among others, as essential skills to analyse economic situations and develop solutions at the market and policy level. This requires an integrated understanding of theoretical conceptualisation of economic issues and their underlying theoretical constructs, methods and tools, and their application on contemporary grand challenges that face the society. For instance, the student will engage with grand challenges (like climate change costs) using economic theory and through analysis of large data via AI and ML. The student will become well versed with several such analytical tools and several economic challenges in a contemporary setting.

The Programme aims to lay a strong foundation of theory and integrate the same with practice. It stands in sharp contrast to conventional ways of teaching and learning economic theory. It covers a wide spectrum of courses that witnesses a unique amalgamation of historical perspectives pertaining to the evolution of economics as a discipline and deeper exposition of fundamentals with mathematical underpinnings. Students will learn alternative approaches to economics, such as economics as an art, economics as a science, and most certainly, economics as a social science. In essence, the Programme aims to offer a holistic development of the knowledge base of the aspirants.

Programme Objective

The Masters of Science in Quantitative Economics at Ahmedabad University is a cutting-edge two-year fully residential postgraduate programme that has been developed keeping in mind the changing environment of both academia and the world of industry. It aims to emphasise on advanced qualitative and quantitative techniques fine-tuned with a delicate blend of rigour, depth, and breadth.

The grand challenges of the modern economic world include data handling with advanced statistical and computational techniques. The objective of the Programme is to prepare a student to use economic theory and contemporary quantitative skills to analyse and solve these grand challenges of the 21st century.

The Programme aims to prepare a student with a sound theoretical background of the principles of economics along with rigorous training on analytical tools, techniques and technologies to address real world issues. The thrust on big data analytics will prepare students to address complex economic problems with greater precision. These challenges include poverty eradication, unemployment, income inequality, financial inclusion, and more recently, healthcare management amid a pandemic. To this effect, the Programme successfully integrates contemporary approaches to complex economic problems that are understood to pose the biggest future challenges to economic policy making across the globe.

USP OF THE PROGRAMME

How are we different?

The distinctive feature of the Programme is its thrust on applications in economics and finance using Data Analytics, Artificial Intelligence, Machine Learning, and conventional as well as contemporary computational methods.

- The Programme is geared towards making students internalise economics and the functioning of financial markets and its mathematical underpinnings in a holistic manner while providing a strong background in programming with applications in finance and economics.
- One of the key USPs of the Programme is that it offers a wide spectrum of courses including historical perspectives on the evolution of economics as a discipline along with a heavy focus on computational and mathematical economics.
- The Programme brings to the forefront Ahmedabad University's enduring commitment to interdisciplinary approach as it offers a wide basket of electives for students to choose from based on their area of interest and career plans.

Learning Outcomes

On successful completion of the programme, a student is expected to have a strong theoretical as well as an empirical understanding of the subject. Further, the internship will expose students to applying the knowledge gained in real life and thus, build a bridge between theory and practice.

As part of the curriculum, students will also acquire proficiency in relevant programming techniques that are key ingredients for a successful future career in the world of industry and academia.



Career Prospects

Upon successful completion of the programme, students will be endowed with requisite skills to cater to the needs of the job market. An indicative list of areas where our graduates have promising career prospects include:

- Investment Banking
- Actuarial Applications
- Credit Rating Agencies
- Retail Industry
- Research Analyst
- Academics
- Policy Making

The university is committed towards creating opportunities for growth in career paths of its students. The thrust on summer internships (industry and/or research) prepares students for the industry and real-life organizations that in turn facilitates final placements. The University's Career Development (Placement) Center (CDC) and Faculty Members are effective aids in forging active connections between the industry and students. The CDC also provides an ecosystem for our students that helps them to imbibe the requisite skills, expand capacities to work as a team and deliver under a rapidly changing milieu.







Course Structure

The Master of Science in Quantitative Economics is a full-time two-year postgraduate programme split across four semesters. In all, a student requires to complete a minimum of 73 credits. This includes 10 core courses in year one, (at most) 2 free electives, a mandatory summer internship of six to eight weeks, mandatory foundation modules that run throughout the first academic year, and at least 10 electives in year two.

As the Programme also requires all students to successfully complete an industrial or research internship of 6-8 weeks duration at the end of the first academic year, students who intend to pursue careers in the corporate sector as well as academia will immensely benefit from it, given the curated pedagogy is in sync with the rapidly changing needs of the industry and academia.

A broader snapshot of the programme structure is as follows.



Foundation Module	Programming using R and Python; Communication and Writing Skills; Modelling for Managerial Decisions
Programme Core	Microeconomics I and II; Macroeconomics I and II; Quantitative Methods I and II; Mathematics for Economics and Finance; Foundation of Finance and Financial Markets; Econometrics; Applications of Machine Learning; Economic History and Indian Economic Problems
Major Core	Applied Econometrics; Financial Time Series Analysis; Big Data for Economics; Policy Evaluations; Information Economics; Advanced Econometrics
Summer Internship	
Major Electives	Game Theory; International Trade; Behavioural Economics; Data and Ethics; Stochastic Processes; Mergers, Acquisitions, and Private Equity; Financial Derivatives and Risk Management; International Finance; Fintech and Financial Services; Environmental Economics; Public Economics; International Macroeconomics; Models of Economic Development; Applications of Geographic Information System (GIS) in Economics; Network Economics; Advanced Game Theory; Climate Change Economics; Financial Analytics; Fixed Income Securities and its Derivatives; Asset Pricing; Technical Analysis; Research in Quantitative Finance; Behavioral Finance

Eligibility Criteria

The candidate must hold a Bachelor's Degree in any discipline with at least 50 percent marks (45 percent for SC/ST candidates) or equivalent cumulative grade point average (CGPA). A background in mathematics and / or statistics is needed for the course. A candidate who has appeared for the final year examination of bachelor's degree can also apply and will be required to furnish a certificate from the university/ institution certifying that the candidate has aggregated 50 percent marks in the previous examinations. Ahmedabad University may verify eligibility at various stages of the selection process. Candidates should note that the mere fulfilment of the minimum eligibility criteria will not ensure consideration for shortlisting.

Admission Procedure

Candidates seeking admission in the Masters programme in Quantitative Economics must apply in the prescribed online form with payment of application fee of INR 1200 (inclusive of GST). Duly filled application form along with the application fee can be submitted before the end of February 2023.

Selection Process

Candidates may apply to the Programme based on their CAT/XAT/GMAT/GRE/GATE scores. Additionally, potential applications who have not taken any of the above mentioned tests can also take the AMSOM test. Shortlisted candidates would be called for a personal interview.

The University will offer admission to the candidates who meet its standard performance requirements across all the selection components, as defined by the Admissions Committee, and as approved by competent authorities.

Fee Structure

The tuition fee for the programme is INR 5,00,000 (INR 2,50,000 per annum) and INR 30,000 (INR 7,500 per semester) towards books/course material.

This is mandatorily a fully residential two-year Programme and students would be provided accommodation on twin-sharing basis. The boarding and lodging expenses would be around INR 1,70,000 per annum.

Financial Aid, Scholarships and Fellowships

At Ahmedabad University, we believe that finances should not stand in the way of pursuing education.

The University provides meritorious scholarships to students based on their academic performance.

Students needing additional financial assistance can opt for our Fellowship. Under the Fellowship, the students are required to undertake Teaching Assistantship under a faculty member assisting them in teaching. This opportunity provides students with both financial assistance and exposure to learning.

Representative List of Faculty at Amrut Mody School of Management

- **Devanath Tirupati**
Executive Provost
PhD (Massachusetts Institute of Technology)
Expertise:
Supply Chain Management
Operations Research
- **Sankarshan Basu**
Dean
Amrut Mody School of Management
PhD (London School of Economics and Political Science, UK)
Expertise:
Financial Calculus, Option Pricing
Bond and Portfolio Valuation
- **Chakravarthi Rangarajan**
Distinguished University Professor and, Former Governor of the Reserve Bank of India, Former Governor of Andhra Pradesh
PhD (University of Pennsylvania)
Expertise:
Economics, Policy Development, and Financial Planning
- **Parag Patel**
Senior Associate Dean
Associate Professor
Amrut Mody School of Management
PhD (Gujarat University)
Expertise:
Accounting, Financial Services, Equity Investment Decisions
- **Abhinandan Sinha**
Assistant Professor
PhD (Indian Statistical Institute, Kolkata)
Expertise:
Development Economics, Political Economy
- **Mita Suthar**
Associate Professor
PhD (Gujarat University)
Expertise:
Macroeconometrics, Industrial Economics, Cultural Economics
- **Gaurav Bhattacharya**
Assistant Professor
PhD (Jawaharlal Nehru University)
Expertise:
International Trade, Energy, Environment and Climate Change, Political Economics
- **Samarth Gupta**
Assistant Professor
PhD (University of Boston)
Expertise:
Industrial Organisation, Development Economics, Financial Inclusion
- **Supratim Das Gupta**
Assistant Professor
PhD (University of South Carolina)
Expertise:
Resource and Environmental Economics, Energy Economics, Real Options, Macroeconomics
- **Vinodh Madhavan**
Associate Professor
PhD (Golden Gate University, San Francisco)
Expertise:
Nonlinear Time Series Analysis, Long Memory, Adaptive Market Hypothesis
- **Molla Ramizur Rahman**
Assistant Professor
PhD (IIT Kharagpur)
Expertise:
Financial Analytics, FinTech, Financial Contagion, Financial Networks, Systemic Risk, Banking
- **Moumita Roy**
Assistant Professor
PhD (George Mason University)
Expertise:
Applied Microeconomics, Experimental Economics, Behavioral Economics, Political Economy, and Development Economics
- **Rahul Singh**
Assistant Professor
PhD (IIM Bangalore)
Expertise:
International Trade, Industrial Organisation and Development Economics
- **Ishita Tripathi**
Assistant Professor
PhD (Louisiana State University)
Expertise:
Microeconomics, Cultural Economics, Political Economics, Crime, Law and Economics
- **Jeemol Unni**
Professor
PhD (Gujarat University)
Expertise:
Labour Economics, Development Studies, Issues in Urban Economics and Informal Economy, Economics of Education, Genders studies
- **Pallavi Vyas**
Associate Professor
PhD (University of Chicago)
Expertise:
Labor Economics, Human Capital Theory, Public Health, Gender and Discrimination
- **Sonal Yadav**
Assistant Professor
PhD (Gujarat University)
Expertise:
Labour Economics, Development Economics, Economics of Education and Health, Gender Studies

The complete list of Faculty at Amrut Mody School of Management, Ahmedabad University can be viewed at: www.ahduni.edu.in/amsom/faculty





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