MADRAS SCHOOL OF ECONOMICS

TWO-YEAR FULL-TIME PGDM IN
RESEARCH & BUSINESS ANALYTICS &
FINANCIAL ENGINEERING

CAMPUS RECRUITMENT BROCHURE

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Madras School of Economics (MSE) is one of the premier institutions in the country for post-graduate teaching and research in Economics, Finance, Environment, Management and Data Sciences. Set up as a non-profit institution, MSE was formed with a mandate to groom cohorts of qualified professionals who would impact public policy and private industry of a vast, growing country. The school is privileged to be led by the celebrated economist, former Chairman of PM's Economic Advisory Council, former Governor of Andhra Pradesh, former Governor of RBI and Padmavibhushan awardee, Prof. Dr. C. Rangarajan.

MSE offers two two-year full-time programs - Master of Arts (MA) and Post Graduate Diploma in Management (PGDM). The MA program has five specializations, in General Economics, Financial Economics, Actuarial Economics, Environmental Economics and Applied Quantitative Finance. The PGDM program offer two specializations, in Research & Business Analytics and Finance.

The dual emphasis at MSE on rigorous theory combined with practical real world application ensures that MSE students are a class apart with functional skills that are readily applicable in the professional world.
Founded by a number of leading academicians, prominent industrialists and well-known financial institutions, the school was registered as a charitable society under the Tamil Nadu Act 27 (Societies Registration Act – Government of India) of 1975 on September 23, 1993.
A unique blend of teaching and research!

MSE is not a general school. We focus on our core strengths of economics and finance with the quantitative rigour of analysis and the litmus test of practical application. Which is why, our recent PGDM offering is sharply tailored to deliver on Finance and Business Analytics.

At MSE, we create an environment for our students to not only find their specific interests but also inspiration. After all, if we are going to fulfill our dream of a 5 trillion economy in 5 years, we need lots of inspired work!
In recent years, the use of Artificial Intelligence, Data analytics/ science and deep learning in tandem has opened the door for myriad opportunities. It has a major role to play in shaping the benefits that we may enjoy in the future. According to an estimate, AI will create close to 2.3 million opportunities by the year 2020 in Machine Learning and Data Science. Given the nature of growth, dynamism and complexity of interrelations among the economies/ sectors, there is a need to train more economists/ financial and data analysts who can easily grasp the situations and find suitable remedies. MSE plays an important role in this regard.

MSE is now 25 years old. During the 25 years of its academic services, it has emerged as a leading institution in both teaching and research in economics, finance, environment, business analytics and management. Apart from the M.A. programmes, MSE offers two AICTE approved two years (full time) Post Graduate Diploma in Management, - in Finance and in Research & Business Analytics.

The PGDM programme at MSE is unique as we follow an analytical approach, built on the economics and finance legacy of MSE. Potential employers of MSE graduates will find them to be well trained in economic/ financial theories, quantitative techniques, econometric software, programming, aware of macroeconomic environment, conscious of the policy dilemmas with a well developed sense of social responsibility. MSE alumni through the years have been placed well and proved themselves conduit to the fields including analytics, research, policymaking, banks, academic institutions and NGOs. The current batch of both MA and PGDM programmes seems to be one of the best and hope they will surely keep the MSE flag flying high.

I wish them a good year!
Leveraging the MSE heritage!

MSE offers post-graduate diploma courses in management with specialisations in Research and Business Analytics and Finance. MSE’s approach reconnects management education with its economics roots, and leverages MSE’s strengths in economics and finance to create managers who are able to apply clear and structured economic thinking to solve real-world problems.

All our management students receive a thorough grounding in mathematics, statistics and econometrics. They are well-trained in algorithms, programming in Python, and the design of computer applications; and get hands-on experience with statistical and modelling software such as R, MATLAB and Stata which results in their having strong implementation skills.

Our first year finance curriculum covers financial markets, corporate finance and financial management over three terms, equipping students with a rigorous foundation to be able to take a wide range of advanced electives in financial engineering, markets, and corporate finance. Similarly, a strong first year foundation in mathematical analysis, linear algebra, and probability and statistics intellectually equips our data science students to take electives in machine learning, artificial intelligence, deep learning and reinforcement learning.

Classes are taught by a combination of in-house faculty and industry experts. Internships, guest lectures, workshops, and live projects augment classroom rigour with multiple opportunities to understand how these techniques are used by industries in practice.

We are confident that our graduates will add value to your organization.
The MSE PGDM is designed to offer two two-year full-time post graduate diploma in (a) Financial Engineering and (b) Research & Business Analytics. These two programs aim to train students for technically challenging jobs with financial institutions, consulting services and analytical companies. They also provide a unique combination of knowledge of complex theories with rigorous exposure to the underlying mathematical-statistical theories and practical financial modeling to enhance the ability of the students to meet the demands of today's industry and companies committed to data driven decision making. Experts from industry further enrich the student ability.

Objectives of the program are:

- Develop a strong foundation for inter-disciplinary work
- Combine course work from the areas of Finance, Economics, Management, Business Analytics and Data Science
- Exposure to latest trends in academics and industry through projects and internship
The two-year program is divided into six terms with classroom instruction, and one term in the summer which consists of an internship in the industry. Both Research & Business Analytics (RBA) as well as Financial Engineering (FIN) undergo a similar first year, with a common syllabus in the first three terms. The focus is on learning foundational Mathematics, Microeconomics, Macroeconomics, Stochastic Calculus, Accounting, Finance with an introduction to Programming, Algorithms and Marketing.

First year PGDM - Common for RBA & FIN

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
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<tbody>
<tr>
<td>111 Financial Mathematics</td>
<td>121 Basics of Financial Instruments</td>
<td>131 Finance I</td>
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<td>112 Microeconomics</td>
<td>122 Macroeconomics</td>
<td>132 Corporate Finance</td>
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<td>113 Operations Research</td>
<td>123 Marketing Concepts</td>
<td>133 Organizational Behavior</td>
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<td>114 Introduction to Accounting</td>
<td>124 Management Information Systems and Data</td>
<td>134 Supply Chain Models</td>
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<td>115 Quantitative Methods</td>
<td>125 Stochastic Process</td>
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<td>116 Object Oriented Programming</td>
<td>126 Algorithmic Programming Matlab/R/Python</td>
<td>136 Human Resources</td>
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### Second year PGDM - RBA

<table>
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<th>Term 4</th>
<th>Term 5</th>
<th>Term 6</th>
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<tbody>
<tr>
<td>242 Introduction to Financial Econometrics</td>
<td>252 Game Theory</td>
<td>262 Advanced Topics in Economics and Finance</td>
</tr>
<tr>
<td>243F Pricing of Derivatives and Options</td>
<td>253F Fixed Income Models</td>
<td>263F Credit Risk Models</td>
</tr>
<tr>
<td>244F Asset Pricing</td>
<td>254F Simulation Techniques in Finance</td>
<td>264F Computational Finance</td>
</tr>
<tr>
<td>246FA Taxation</td>
<td>256FA Risk Models</td>
<td>266FA Algorithmic and High Frequency Trading</td>
</tr>
<tr>
<td>246FB Topics in Behavioral Finance</td>
<td>256FB Stochastic Control in Finance</td>
<td>266FB Advanced Topics in Financial Engineering</td>
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### Second year PGDM - FIN

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<tr>
<th>Term 4</th>
<th>Term 5</th>
<th>Term 6</th>
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</thead>
<tbody>
<tr>
<td>241 Financial Markets and Regulatory Mechanisms</td>
<td>251 Financial Time Series Analysis</td>
<td>261 Banking and Financial Services</td>
</tr>
<tr>
<td>242 Introduction to Financial Econometrics</td>
<td>252 Game Theory</td>
<td>262 Advanced Topics in Economics and Finance</td>
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<tr>
<td>243D Algorithms for Big Data</td>
<td>253D Machine Learning</td>
<td>263D Reinforcement Learning</td>
</tr>
<tr>
<td>244D Artificial Intelligence</td>
<td>254D Artificial Neural Networks</td>
<td>264D Deep Learning</td>
</tr>
<tr>
<td>245DA Pricing of Derivatives and Options</td>
<td>255DA Simulation Techniques in Finance</td>
<td>265DA Computational Finance</td>
</tr>
<tr>
<td>245DB Cryptography</td>
<td>255DB Graphical Models</td>
<td>265DB Mechanism Design</td>
</tr>
<tr>
<td>246DA Information Theory</td>
<td>256DA Robotics</td>
<td>266DA Quantum Computing</td>
</tr>
<tr>
<td>246DB Advanced Analytical Models for Decision Making</td>
<td>256DB Bioinformatics</td>
<td>266DB Advanced Topics in Data Science</td>
</tr>
</tbody>
</table>
The specialization in Research and Business Analytics offers electives such as machine learning, artificial intelligence, big data, and domain specific analytics courses such as medical analytics and financial analytics, in order to cater to industry demand in such fast growing areas.

Select Courses - RBA

**Domain-specific courses**
- Medical Analytics
- Financial Analytics
- Algorithms

**Electives**
- Big Data
- Machine Learning and Artificial Intelligence

Who needs RBA grads?

- Students with the RBA specialisation are ready for careers as data scientists, business analysis and intelligence, management reporting and control, data-driven consulting and policy formulation
The specialization in Finance includes in-depth theoretical and empirical coursework in asset pricing and corporate finance. Electives offered include stochastic calculus, derivatives pricing, computational techniques in finance and market microstructure.

**Select Courses - FIN**

**Domain-specific courses**
- Asset Pricing
- Corporate Finance

**Electives**
- Computational Techniques in Finance
- Stochastic Calculus
- Market Microstructure
- Derivatives Pricing
- Financial Time Series

**Who needs Finance grads?**

- Students with the FIN specialisation are ready for careers in quantitative finance roles like structuring, trading, and risk management.
• Dr. K. R. Shanmugam  
Ph.D. (Econometrics), University of Madras, India  
Director & Professor

With research interests in Public Finance, Macroeconomic models, Applied Econometrics, Finance and Economics of Human Resources, Dr. Shanmugam teaches Financial Time Series and Econometrics.

• Dr. Rakesh Nigam  
PhD Stanford (Applied Physics)  
Professor & Principal, PGDM

Acclaimed for the Nigam’s Formula on Solar Oscillations, Dr. Nigam has held senior teaching and research positions in the International Computer Science Institute, Berkeley, USA and the Chennai Mathematical Institute, India.

• Dr. Srikant P  
Fellow, IIM Calcutta (Finance & Control)  
Associate Professor & Chairperson, PGDM

Dr. Srikant teaches courses in financial economics, corporate finance and financial markets. He holds a PhD and MBA from IIM Calcutta, and a bachelors degree in computer engineering from Delhi University. Before entering academics, Dr. Srikant managed multi-billion dollar proprietary systematic and arbitrage strategies.
• **Dr. Naveen Srinivasan**  
  Ph.D. (Economics), Cardiff Business School, Cardiff University, UK, 2002  
  Professor

• **Dr. Saumitra Bhaduri**  
  Ph.D. (Economics), IGIDR, Mumbai, 1998  
  Professor

• **Dr. Zareena Begum J**  
  Ph.D., Indian Institute of Technology Roorkee, 2007  
  Associate Professor

• **Dr. Sowmya Dhanaraj**  
  Ph.D. (Development Studies), IGIDR, Mumbai, 2017  
  Assistant Professor

• **Dr. Purna Banerjee**  
  Ph.D. (Economics), IGIDR, 2018  
  Assistant Professor

• **Dr. Parthajit Kayal**  
  Ph.D. (Quantitative Finance), IFMR  
  Assistant Professor

**Visiting Faculty and Guest Lectures**

Apart from the regular faculty, students enjoy the privilege of distinguished guest faculty from acclaimed institutions as well as special lectures from industry stalwarts.
Some of the invited talks and endowment lectures that our students had the opportunity to attend last year include -

- **Chris Arnold**  
  Head of Product, Analysis & Modelling at Wells Fargo  
  *Data Visualization*

- **Dr. A. K. Pradeep**  
  Founder & CEO, MachineVantage  
  *Neuromarketing*

- **Dr. Gautam Udupa**  
  Research Director, Center for Advanced Financial Research and Learning  
  *MSE silver jubilee year distinguished lecture*

- **Dr. Rajiv Kumar**  
  Vice Chairman, Niti Aayog  
  *11th SAGE-MSE Endowment Lecture, "Towards $5 Trillion Economy"*

- **Dr. Pami Dua**  
  Professor, Delhi School of Economics  
  *Dr. R. Venkataraman Endowment Lecture*

- **Dr. Anaka Aiyar**  
  Post-Doctoral Associate, Tata-Cornell Institute for Agriculture and Nutrition & MSE Alumna  
  *MSE Silver Jubilee distinguished lecture: The Spillover Effects of Child Health Insurance on Non-Beneficiaries within the Household: Evidence from Vietnam*

Our students also are privileged to attend the regular events organized by the Chennai International Centre (CIC) at the MSE campus. Past speakers list at [www.cic.in](http://www.cic.in).
The Placement Office at MSE helps recruiters meet their future star performers:
The Placement Office comprises of the Head, Placements and External Relations; a Faculty chairperson and a staff co-ordinator. The office handles all recruiter engagement at MSE and is assisted by a voluntary student body.
I. **Scheduling**
Working with the Placement Office to sync recruiter process with the campus schedule; Choosing student pool - (A) MA + PGDM (B) Only MA (C) Only PGDM; getting a SPOC assigned.

August 2019-

2. **Engagement**
Student engagement through optional pre-placement talk by recruiters to present their company beyond the CTC: the culture, career graph, job roles, etc.

August - October 2019

3. **Applications**
Sharing CVs of interested students by the Placement Office; Shortlisting of student CVs by the recruiter for the recruitment process.

August - November 2019

4. **Assessments**
Testing and other assessment depending on the recruiter process; Shortlisting for final interviews.

14 September - 11 November 2019

5. **Interviews**
Interviewing shortlisted students usually on campus or through tele-conferencing. Optional GD.

02 December 2019 onwards

6. **Final Offers**
Final job offers made. List to be communicated strictly to the Placement Office, list of students accepting offers shared back.

December 2019
SELECT RECRUITERS AT MSE - ALL PROGRAMS
Detailed batch profile with resumes will be shared on request.

**Batch Profile - Class of 2020 for Final Placements**

- **Representing 10 states of the country**

- **35% with some prior work experience**

- **35% from tech/science backgrounds**

**Home States**
- West Bengal: 4%
- Andhra Pradesh: 4%
- Telangana: 8%
- Tamil Nadu: 19%
- Rajasthan: 4%
- Maharashtra: 4%
- Haryana: 8%
- Kerala: 23%
- Delhi-NCR: 19%

**Under Graduate Stream**
- Science: 8%
- Commerce: 19%
- Economics: 46%
- Engineering: 27%

**Work Experience**
- None: 65%
- Less than 2 years: 19%
- Between 2 - 5 years: 12%
- 5 years: 4%
Detailed batch profile with resumes will be shared on request.

**Home States**
- Tamil Nadu: 50%
- Telangana: 7%
- Andhra Pradesh: 7%
- Delhi - NCR: 7%
- Haryana: 3%
- Jharkhand: 4%
- Maharashtra: 4%
- Odisha: 7%
- Punjab: 4%

**Representing 10 states of the country**

**Work Experience**
- No Work ex: 64%
- Between 2 - 5 years: 4%
- Less than 2 years: 32%

**36% with some prior work experience**

**Under Graduate Stream**
- Engineering: 34%
- Computers: 4%
- Economics: 31%
- Commerce: 15%
- Science: 4%
- Sociology: 8%

**42% from tech/science backgrounds**
Some Frequently Asked Questions

The Placement Office works to ensure you have a great recruitment experience at MSE. If you have other questions apart from those listed below, don't hesitate to call us.

How are slots allocated to companies during the Placement/Internships Season?

Transparent process with a combination of depth of recruiter relationship, sector focus, student preference, job profile, intake as well as CTC.

What facilities are available to an on-campus recruiter?

The school shall make available appropriate spaces according to need, that are spacious and fully air-conditioned, with projectors and audio systems.

Can recruiters conduct telephonic/video interviews?

Yes. The school is happy to coordinate such conferencing.

Can a student who has accepted an offer, apply to a subsequent recruiter during the campus recruitments?

No. Once a student receives a final job/internship offer, he/she is removed from the recruitment process. However, he/she is not prohibited from applying off-campus to other companies on their own.

Can recruiters conduct interviews after December?

Yes. The recruitment process is open till end of March 2020. However, we encourage you to participate in December to ensure you get to meet a larger pool of candidates.
 WE LOOK FORWARD TO SEEING YOU.

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