RANKINGS

INSTITUTION OF EMINENCE - 2019

NATIONAL INSTITUTIONAL RANKING FRAMEWORK - 2019
#1 Overall best University in India
#1 Engineering Institute in India
(4 years in a row)

ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS
#1 Position in the maiden edition of ATAL Ranking of Institutions on Innovation Achievements
LOCATION

Guindy, Chennai, Tamil Nadu, India

250 Hectares
Indian Institute of Technology Madras was founded in 1959 with technical and financial assistance from the former government of West Germany, it was the third IIT that was established by the Government of India.
MOTO – “Success is born out of action”

VISION

● The advancement of knowledge through education & research in engineering, social sciences and humanities.
● Service to the community and nation through the use of the resources, both intellectual and material.

MISSION

● To excel in all aspects of academic activity and produce high quality science based engineering students.
● Establish and foster interactive linkages with leading technological institutions and centers of research in India and abroad.
● To carry out public services as a third dimension to their role in addition to education and research.
DEPARTMENTS

ENGINEERING

SCIENCE

HUMANITIES & MANAGEMENT STUDIES
• Aerospace Engineering
• Applied Mechanics
• Biotechnology
• Chemical Engineering
• Civil Engineering
• Computer Science and Engineering
• Electrical Engineering
• Engineering Design
• Mechanical Engineering
• Metallurgical and Materials Engineering
• Ocean Engineering
SCIENCE

- Mathematics
- Physics
- Chemistry

HUMANITIES AND MANAGEMENT STUDIES

- Humanities & Social Sciences
- Management Studies
COURSE BASED PROGRAMS

• 4-year Bachelor’s - B. Tech
• 5-year Dual Degree - B.Tech & M.Tech
• 5-year Integrated - M.A & M.Sc
• 2-year Master’s - M.Sc, M.B.A, M.Tech,
  M.Tech(UOP);
  - M.Tech(ClinicalEngineering)
RESEARCH BASED PROGRAMMES

- M.S. - 2 to 3 years after B. Tech / M.Sc
- Doctoral - 4 to 5 years after Masters
TOTAL NUMBER OF STUDENTS

Student Ratio

- Under Graduate
- Masters
- Ph D

UG 2105
M.Sc 287
Dual Degree 2037
M.Tech 1356
MBA 115
M.A 240
M.S 746
Ph.D 2963
INTER-DISCIPLINARY RESEARCH AREAS

- Combustion
- Atmospheric Sciences and Technology (Climate science and climate change)
- Nano Science and Technology
- Material Science and Technology
- Sustainability
- Technology and policy
- Computational Engineering
- Environmental Science and Engineering
- MEMS
- NEMS
- Lab on a chip
- Microfluidics
- Bio-engineering
- Advanced sensors
- Instrumentation and Control
- Energy Technology
- Medicine and health care
- Communication Technology
- Security and Defence
- Big Data.
INTER-DISCIPLINARY RESEARCH AREAS

Combustion
- Atmospheric Science and Technology, including climate science and climate change

Nano/ Bio materials and devices

Sustainability
- All energy technologies including new and renewable
- Transportation technologies including guidance and control
- Heritage structures

Technology and Policy
- Education and ICT
- Ethics
- Technology management
- Equity
INTER-DISCIPLINARY RESEARCH AREAS

Environmental science and engineering in the following (and not restricted to) areas

- Air quality and pollution
- Water quality and pollution
- Nuclear waste management
- Carbon dioxide sequestration

Computational Sciences applied to:

- Materials
- System biology
- Quantum computing
- Analytics, simulation and optimization

MEMS, NEMS, Lab on a chip, micro fluidics and applications

Bio- engineering – applications and devices

Advanced sensors for national security and personal health
Centers of Excellence:

1. National Technology Centre for Ports, Waterways and Coasts (NTCPWC)
2. Robert Bosch Center for Data Science and Artificial Intelligence
3. Centre of Excellence on Dam Safety &amp; Dam Rehabilitation
4. Centre of Excellence (CoE) in Advanced Materials and Manufacturing.
5. Centre of Propulsion Technology (CoPT)
6. Graphene Applications (TSAMRC)
7. The Center for Excellence in Steel Technology (CoExiST)
8. Industrial Internet of Things (IIT-GE)
9. Center for Urbanization, Buildings and the Environment (CUBE)
10. Applied Centre for Advanced Automotive Research (CAAR).
11. Indian Solar Energy Harnessing Centre (ISEHC)
12. Raghupathi Singhania Centre of Excellence for Tyre &amp; Vehicle Mechanics
13. Centre of Excellence in Urban Transport
14. Centre of Decentralised Power Systems
15. Centre for Non-Destructive Evaluation
16. National Centre for Combustion R&D
17. National Centre for Catalysis Research
18. Centre for NEMS & Nanophotonics (CNNP)
19. Healthcare Technology Innovation Centre (HTIC)
20. Centre for Technology and Policy (CTaP)
21. National Centre for Safety of Heritage Structures (NCSHS)
22. Indo-German Centre for Sustainability (IGCS)
23. China Studies Centre
24. Reliance-IITM Telecom Centre of Excellence
25. Centre for Functional Nanomaterials
26. Thematic Unit of Excellence on Water
27. Centre for Excellence in Wireless Technology (CEWIT)
28. Centre of Excellence on Machine Tools and Production Technology (AMTDC)
29. Centre of Excellence in Iron & Steel Technology (COEXIST)
30. Centre for Computational Brain Research (CCBR)
31. Interdisciplinary Laboratory in Data Sciences (ILDS)
32. Initiative in Biological Systems Engineering (IBSE)
33. Centre for Social Innovation & Entrepreneurship (CSIE)
34. Centre for Railway Research (CRR)
35. Centre for Battery Engineering and Electric Vehicles (CBEEV)
36. TTK Centre for Rehabilitation Research and Device Development (R2D2)
37. Thematic Unit of Excellence (TUE) on Water Purification using Nanotechnology
RESEARCH AND IP

**Transformational Research**
- Direct Societal Impact
- Disruptive improvement in housing, water, healthcare, education, energy
- 900+ Projects Annually
- 250 Indian Companies
- 90+ IP Annually
- 40+ Multinational Companies

**Translation Research**
- Industry
- Space
- Defense
- Incubation
- Academic (basic, open-sky) research Publications
- Publication
SOCIETAL IMPACT

Uninterrupted Power

Clean Water

Assistive Devices

Advanced Healthcare

Affordable Housing
## RESEARCH FUNDING

<table>
<thead>
<tr>
<th>No.</th>
<th>Financial Year</th>
<th>Sponsored Research Projects (Value Rs. In Crores)</th>
<th>Consultancy Assignments (Value Rs. In Crores)</th>
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<td>2018-2019</td>
<td>536.548</td>
<td>145.899</td>
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<td>2016-2017</td>
<td>330.92</td>
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<td>2015-2016</td>
<td>204.48</td>
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<td>193.20</td>
<td>54.00</td>
</tr>
<tr>
<td>6</td>
<td>2012-2013</td>
<td>105.20</td>
<td>45.88</td>
</tr>
<tr>
<td>7</td>
<td>2011-2012</td>
<td>181.85</td>
<td>50.77</td>
</tr>
<tr>
<td>8</td>
<td>2010-2011</td>
<td>117.15</td>
<td>36.39</td>
</tr>
</tbody>
</table>
India’s first University-Based Research Park
IITM - RESEARCH PARK

85 R&D Companies

180 Start-ups
IITM ENTREPRENEURSHIP ECOSYSTEM

Ideate → Pre-Incubate → Incubate → Support

IITMEF - IIT Madras
Entrepreneurship Forum

E-Cell

M.S. Entrepreneurship

Innovation Ecosystem Project

Centre for Innovation

Nirmaan

IITM Incubation Cell

IITM Biogas Incubator

RTBi

IITM’s Rural Technology and Business Incubator

villgro

possible

Industrial Consultancy & Sponsored Research - IIT Madras

TiE Chennai

KEIRETSU FORUM

IIT Madras - CSIE
(Center for Social Innovation & Entrepreneurship)
OFFICE OF GLOBAL ENGAGEMENT

ROLES

• Coordinate international delegation visits to IITM and reach out to foreign universities.

• Encourage, maintain and sustain relationships with foreign universities and enterprises.

• Promote international student exchanges (both inbound and outbound)

• Facilitate faculty exchanges and research collaborative workshops

ACTIVITIES

• Focal point for international visitors

• Host visitors based on established protocol

• Plan and coordinate department & lab visits, maximize effectiveness of interactions with IITM faculty
RESEARCH COLLABORATION PHILOSOPHY

1. **Faculty Interactions**
   - (>200 MoUs)

2. **Research Scholar Exchanges**
   - (>100 MoUs)

3. **Joint Supervision of M.S. & Ph.D Candidates**
   - (>50 MoUs)

4. **Joint Masters' & Doctorate Degrees**
   - (>10 MoUs)

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Your Company Name
UNIVERSITY PARTNERSHIPS

We are focused on building strong research collaborations with leading global institutions. To accomplish this, we envisage a 4-stage process:

- Faculty interactions (visits & workshops, video-conferencing, joint proposals, co-authored papers)
- Student exchanges (Ph.D. and M.S. scholars to spend 3-6 months carrying out research at collaborators' laboratories)
- Joint-supervision of research scholars, serving on doctoral and Masters' committees
- Joint-degree programs (where sufficient sustainability and scalability of relations has been demonstrated)
MEMORANDUM OF UNDERSTANDING

AFRICA: 7
ASIA: 62
AUSTRALIA: 15
EUROPE: 132
NORTH AMERICA: 40
JOINT DOCTORATE PROGRAMS (JDP)

Europe
• RWTH Aachen University, Germany
• University of Duisberg-Essen, Germany
• University of Passau, Germany
• University of Heidelberg, Germany
• University of Bordeaux, France
• École centrale de Nantes, France
• Aalto University, Finland

America
• Michigan State University, United States of America

Australia
• University of Melbourne
• Queensland University of Technology
• Swinburne University of Technology
• University of Technology Sydney
• Deakin University
• Curtin University

Asia
• National University of Singapore, Singapore
• National Tsing Hua University, Taiwan
• National Chiao Tung University, Taiwan
• Nanyang Technological University, Singapore
JOINT SUPERVISION PROGRAMS (JSP)

- The University of Melbourne, Australia
- Deakin University, Australia
- Purdue University, USA
- University of Sydney, Australia

JOINT MASTERS PROGRAM (JMP)

- University of Passau, Germany
INBOUND

• Enquiries and assistance to students for exchange programs
• Processing of applications
• Welcome Information Package before arrival
• Pick up from airport and help in settling down @ IITM.
• Orientation program
• Immigration process assistance
• Buddy Program

OUTBOUND

• Advertising of “study-abroad”, research exchange & internship programs
• Handling enquiries for exchange programs
• Guidance for exchange programs at IITM
• Nomination
• Facilitating the application process
• Coordinating with partner universities
FACULTY COLLABORATIONS

• Global Initiative of Academic Networks (GIAN), an initiative by Govt. of India, is aimed at bringing international faculty members to institutes of Higher Education in India for a duration of two to three weeks.
  Link - http://www.gian.iitkgp.ac.in/

• Visiting Advanced Joint Research (VAJRA) Faculty Scheme is a dedicated program exclusively for overseas scientists and academicians with emphasis on Non-resident Indians (NRI) and Persons of Indian Origin (PIO) / Overseas Citizen of India (OCI) to work as adjunct / visiting faculty for a specific period of time in Indian Public funded academic and research institutions.
  Link - http://www.vajra-india.in/

• IIT Madras has offered twice as many courses as the next closest institution in India. One-fourth of all visiting faculty are being hosted by IIT Madras.
Scheme for Promotion of Academic and Research Collaboration (SPARC) funds for long term visit by the International Faculty (2 to 8 months) but would also fund the travel and sustenance of Indian students at the University/ Institute of the International collaborator

Link - https://sparc.iitkgp.ac.in/index.php

Visiting International Faculty (VIF) is a new program launched by IITM, focusing on recruiting full-time foreign faculty at the equivalent level of Assistant Professor.

• Target Groups for VIF – Recent Doctoral Graduates
• Gross Pay (Including Benefits) – 2000 – 2200 Euros per month

Link - https://facapp.iitm.ac.in/

IITM Faculty Research Profiles - https://icandsr.iitm.ac.in/sites/default/files/pdf/IITMFP.pdf
ACADEMIC INFORMATION

DURATION | SEMESTER 1 | SEMESTER 2
--- | --- | ---
Term | 3rd Week of July to 1st Week of December | 2nd Week of January to 2nd Week of May
Classes | Last Week of July to Mid of November | Mid of January to End of April
Orientation | 3rd Week of July | 2nd Week of January
Exams | 3rd & 4th Week of November | 1st & 2nd Week of May

For exact Academic Calendar log on to: [http://www.iitm.ac.in/calendar](http://www.iitm.ac.in/calendar)

Faculty offering exchange opportunities

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>Bachelor/UD</th>
<th>Master</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Applied Mechanics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bio Technology</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Chemistry</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Computer Science and Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Engineering Design</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Management Studies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mathematics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Metallurgical and Materials Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Ocean Engineering</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Physics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

For online Course Handbook log on to: [http://www.iitm.ac.in/courses](http://www.iitm.ac.in/courses)

The attendance code and grade points followed at IITM are given below:

<table>
<thead>
<tr>
<th>Attendance rounded to</th>
<th>Remarks</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;90%</td>
<td>Very Good</td>
<td>VG</td>
</tr>
<tr>
<td>80-89%</td>
<td>Good</td>
<td>G</td>
</tr>
<tr>
<td>&lt;80%</td>
<td>Poor</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
</tr>
<tr>
<td>D</td>
<td>7</td>
</tr>
<tr>
<td>E</td>
<td>6</td>
</tr>
<tr>
<td>U</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit System followed in IIT Madras:
1 credit = 50 min (1 credit hour) per week
1 credit hour lecture needs 2 credit hours outside the classroom (for homework and tutorial etc.)
So 1 lectures a week = 3 = (3 x 2) = 6 credit course
2.5 hrs of lab work = 3 credits

In any given semester, a student should not be required to register for more than 60 credits. This means a maximum academic time commitment of about 56 clock hours every week.

Language of Instruction: English

Language Courses:
- German
- French
- Chinese courses are offered as part of Humanities department courses

APPLICATION PROCEDURE

Last date for Application:
- SEMESTER 1: 18th May
- SEMESTER 2: 18th November

Required Documents:
- Application Form
- Transcripts
- Nomination letter from international Office

OTHER INFORMATION

Estimated cost of living: ₹8000 / month (approx.)
Health Insurance: ₹1000 (approx.)

Miscellaneous:
Accommodation arranged by partner University
For additional information on accommodation write to Office of International Relations.
If accepted, Academic section will issue offer letter for Visa requirements.

IITM follows the semester system.

IITM follows the quarter system for MBA program, each quarter is usually of eight week duration.

Quarter 1&2: July - September
Quarter 3&4: September - November
Quarter 5&6: January - March
Quarter 7&8: March - May
CONTACT US

Prof. Raghunathan Rengaswamy
Dean – Global Engagement
dean@iitm.ac.in
+91 44 2257 8070

Dr. Sachin S. Gunthe
Faculty Advisor – International Relations
s.gunthe@iitm.ac.in
+91 44 2257 4308

Mrs. Kavitha G.R
General Manager - International Relations
oir@iitm.ac.in
+91 44 2257 4926

Inbound Coordinators

Akshaya Shridharr
Inbound Coordinator Study tours
akshaya.iitm@gmail.com
+91 44 2257 4928

Outbound Coordinator

Mr. R. Harish Ananth
Executive Officer - Outgoing Students
oir4@wmail.iitm.ac.in
+91 44 2257 4928

Ms. Vijayvani Samuel
Liaison Officer – University Partnerships
oir3@wmail.iitm.ac.in
+91 44 2257 4928

https://www.iitm.ac.in/
Continuation…

Ms. Rupa Suhas Pandit
Liaison Officer - International Projects
oir1@wmail.iitm.ac.in
+91 44 2257 4928

Ruthramoorthy S
Project Officer - Logistics
ruthra.iitm@gmail.com
044 - 2257 8386

A.Uthayaraja
Senior Executive – Web Developer
uthayavin@alumni.iitm.ac.in
044-2257 8389

Ms. Archana . R
Secretarial Assistant
oir@iitm.ac.in
+91 44 2257 4926

https://www.iitm.ac.in/
Contact Details

Office Of Global Engagement, IIT Madras, Chennai-600036

044 2257 4926/27/28

oir@iitm.ac.in and oir2.iitm@gmail.com
Transforming Minds
Indian Institute of Technology - Madras