

## IIT Madras - Faculty Recruitment - Specialization Areas

Advt.No.IITM/R/2/2020 Dt.11.11.2020

Basic qualifications and experience for the post of **Associate Professor** is available in the detailed advertisement at Section A & B. In addition to the basic qualifications and experience required for eligibility, applicants are expected to have exceptional academic outputs commensurate with the post applied.

Department-wise areas of specialization sought and specific qualification requirement (if any), and are detailed in the table below:

SNo	Department	Post / Specific Qualification Requirement	Specialization Area
1	<b>Aerospace Engineering</b>	<b>Associate Professor</b> Specific Qualification*	Aeromechanics, flight dynamics & control of Rotorcraft and UAVs
<p>*Candidates should have clear focus in one or more of the listed areas and have aero background as detailed below:</p> <ul style="list-style-type: none"> <li>● At least one degree (Bachelor's, Master's, Doctoral) in Aerospace Engineering. <i>(OR)</i></li> <li>● At least 3 years teaching experience in handling undergraduate / graduate level courses related to Aerodynamics / Flight Mechanics / Aircraft Propulsion / Aerospace Structures in an Aerospace Engineering department at an IIT / IIST Trivandrum / reputed university abroad. <i>(OR)</i></li> <li>● PhD thesis relevant to Aerospace Engineering and awarded by a university without an Aerospace Engineering department.</li> </ul>			
2	<b>Applied Mechanics</b>	<b>Associate Professor</b>	(i) Experimental Fluid Mechanics with Heat Transfer Application and Physics Based Modelling. (ii) Mechanics of Human movement with emphasis on Neural, Cognitive and Behavioural aspects.
3	<b>Biotechnology</b>	<b>Associate Professor</b> ● PhD in Chemical Sciences	(i) Theoretical Molecular Biophysics
4	<b>Chemical Engineering</b>	<b>Associate Professor</b> ● At least one degree in Chemical Engineering	All areas of Chemical Engineering

5	Civil Engineering	<b>Associate Professor</b>	
		<p>a) Bachelor's degree in Civil Engineering.</p> <p>Outstanding candidates with demonstrated excellence in the research area, with basic degree in other allied disciplines would also be considered.</p>	(i) <b>Hydraulic and Water Resources Engineering:</b> Computational hydraulics and flood flow modelling. Experience in carrying out physical modelling studies and / or field measurement campaigns is desirable.
		<p>b) Bachelor's degree in Civil Engineering</p>	(i) <b>Pavement Engineering and Management:</b> Nonlinear Viscoelastic/Viscoplastic Analysis of Bituminous Materials, Application of Damage Mechanics and Fracture Mechanics to Bituminous Mixtures, Reliability-Based Design Optimization as applied to Pavement Engineering, Dynamic Analysis of Pavement Structures, Design of Bituminous and Concrete Pavements, Non-destructive testing of Pavements, Road Asset Management, and Pavement Construction Technology.
6	Computer Science & Engineering	<b>Associate Professor</b> Specific Qualification <sup>#</sup>	All areas
	<p><b>#Computer Science &amp; Engineering:</b></p> <ul style="list-style-type: none"> <li>● <b>Bachelor's Degree:</b> Candidates must have an engineering degree in Computer Science and Engineering. Candidates with a Bachelor's degree in Electrical Engineering (with specialization in Electronics and Communications) or in Electronics and Communications Engineering may also apply if their records clearly demonstrate ability to teach core computer science courses.</li> <li>● <b>Master's Degree:</b> Candidates must hold a Master's degree in engineering from Computer Science/Computer Science and Engineering/Computer Engineering program. <i>[This may be waived if the candidate was admitted to a direct Ph.D. program after the Bachelor's degree.]</i></li> <li>● <b>Ph.D. Degree:</b> Must be in Computer Science / Computer Science and Engineering / Computer Engineering.</li> </ul>		
7	Electrical Engineering	<b>Associate Professor</b>	<p>(i) Organic Optoelectronic Devices</p> <p>(ii) Inverse problems in electromagnetics</p> <p>(iii) Power Electronics and Motor Drives for High Power, Medium Voltage Applications.</p>
8	Humanities & Social Sciences	<b>Associate Professor</b>	<p>(i) English (Medical Humanities)</p> <p>(ii) Sociology (Sociology of Religion)</p> <p>(iii) Anthropology (Work, body and gender)</p> <p>(iv) Economics (Energy &amp; Environmental Economics)</p> <p>(v) Chinese Studies (Constructivism and Political-economy approaches)</p>

9	Management Studies	<b>Associate Professor</b>	(i) Marketing Management
		<p>a) Ph.D in Marketing / Sales Management with excellent academic record and experience as per eligibility requirement</p>	
		<p>b) Ph.D in Organizational Behaviour with excellent academic record and experience as per eligibility requirement</p>	(i) Organizational Behaviour
10	Mathematics	<b>Associate Professor</b> <ul style="list-style-type: none"> <li>Master's degree in Mathematics and Ph.D. in Mathematics.</li> </ul>	(i) Combinatorial Graph Theory
11	Mechanical Engineering	<b>Associate Professor</b> <ul style="list-style-type: none"> <li>At least one degree (Bachelor's, Master's, Ph.D) in Mechanical Engineering or in allied disciplines of Engineering.</li> </ul> <p>Candidate must have demonstrated the capability in any of the advertised areas through publications in relevant reputed journals and/or awarded patents or products developed.</p>	<ul style="list-style-type: none"> <li>(i) Modern Mobility Systems</li> <li>(ii) Bio-Mechanical Engineering</li> <li>(iii) Computational Mechanics</li> <li>(iv) Data Science with applications in Mechanical Engineering</li> <li>(v) Smart &amp; Additive Manufacturing</li> <li>(vi) Precision Manufacturing &amp; Metrology</li> <li>(vii) Mechanical Deformation Processes</li> <li>(viii) Sustainable Energy Generation &amp; Utilization</li> <li>(ix) Interfacial Fluid Dynamics</li> <li>(x) Turbomachines</li> <li>(xi) Multiphase Flow and Heat transfer</li> <li>(xii) Combustion &amp; Gasification</li> </ul>
12	Metallurgical & Materials Engineering	<b>Associate Professor</b> <ul style="list-style-type: none"> <li>At least one degree (Bachelor/ Master) in Metallurgical or Materials Engineering.</li> </ul>	<ul style="list-style-type: none"> <li>(i) Computational Crystal Plasticity</li> <li>(ii) Processing of Metal Foams</li> </ul>
13	Physics	<b>Associate Professor</b>	<ul style="list-style-type: none"> <li>(i) Spectroscopic study of semiconductors</li> <li>(ii) Theory of Quantum Computing and Quantum Information</li> <li>(iii) Nuclear Matter Theory</li> </ul>