***Annexure-II***

The minimum essential qualifications with relevant fields and desirable areas of specialization in the departments which have vacancies for the post of Associate Professor (Level-13A2)

Ref: Advt No. Estt. /2026/Asso. Prof/1599 dtd. October 16 , 2026

| Sr. No. | Name of Department | Minimum Essential Qualifications | Desirable areas of Specializations |
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| 1. | Computer Science & Engineering | **B.E./B.Tech**. or equivalent in Computer Science & Engineering / Computer Engineering/Information Technology/Computer Technology/ Information and Communications Technology/ Artificial Intelligence/ Data Science or any relevant discipline<br><br>**M.E./M. Tech./MS** in Computer Science & Engineering/ Computer Engineering/Information Technology/Computer Technology/Information and Communications Technology/ Artificial Intelligence/ Data Science or any relevant discipline.<br><br>**Ph.D.**in any of the areas of specialization or any relevant specialization | **1. Computer Systems, Architecture & High-Performance Computing:** Computer Architecture, Digital Logic, OS, Compiler Design, Algorithms & Complexity, HPC, Parallel/Concurrent Computing, Embedded Systems, Quantum Computing, Theoretical Computer Science<br>**2. Computer Networks, Cloud & Distributed Systems:** Computer Networks, Distributed Systems, Cloud Computing, DevOps, Edge/Fog Computing, IoT, Cyber-Physical Systems, Drones and related systems, Blockchain and Distributed Ledger Technology<br>**3. Cybersecurity, Software Security & Digital Forensics:** System Security, Software Security, ML for Security, Hardware Security, Digital Forensics, IoT Security, Vulnerability Management & Mitigation<br>**4. Software Engineering, Formal Methods & Program Analysis:** Software Engineering, Formal Methods, Software Verification, Software Testing, Program Analysis<br>**5. Artificial Intelligence, Machine Learning & Data Science:** AI, Applied ML, Data Science, Deep Learning, Intelligent Systems, Robotics, Agentic AI, Generative |
| 2 | Artificial Intelligence (AI) | | |

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| | | | AI, Explainable AI, Big Data Analytics, Game Theory, Edge AI, AI for Sustainable Development<br>**6. Computer Vision, Image Processing & Natural Language Processing:** Computer Vision, Image Processing, NLP, Multimodal AI, Language Intelligence<br>**7. Human–Computer Interaction & Game Design:** HCI, Game Design, Interactive Computing, Cognitive Computing, UI/UX Design, Extended Reality, Smart Systems |
| 3 | Electrical Engineering | **B.E./B. Tech. or equivalent** in Electrical Engineering /Electrical and Electronics Engineering/ Instrumentation and Control Engineering / Power Systems Engineering /Electrical Power Engineering/ Electrical and Instrumentation Engineering/Power Electronics/Electrical Engineering and Industrial Control/Power Electronics and Instrumentation Engineering/ Applied Electronics and Instrumentation<br>**M.E./M. Tech. or equivalent** in Electrical Engineering/ Power System/Power Electronics and Drives/ Control Systems/ Electric Drives and Control/ Instrumentation and Control/ Electrical- Control and Automation/ Machines and Electrical Drives/ Energy Systems/ Signal Processing and Control/Microprocessor System Applications/Computer Controlled Industrial Power/Systems Engineering or relevant discipline<br><br>Ph.D. in relevant discipline | • Power Systems<br>• Instrumentation and Control Renewable Energy/Energy Systems Engineering<br>• High Voltage Engineering<br>• Power Electronics<br>• Electrical Control and Automation |

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| 4 | Electronics Engineering | **B.E./B.Tech**. or equivalent in Electronics Engineering, Electronics & Communication Engineering<br><br>**M.E./M.Tech.** or equivalent in Electronics Engineering/ Electronics & Communication/VLSI & Embedded System<br><br>**Ph.D.**in relevant discipline | • RF and VLSI Design<br>• Analog and Digital Mixed-Signal Design<br>• Neuromorphic Computing<br>• Biomedical Image Processing<br>• Embedded Systems and Processor Architecture<br>• Quantum Sensing and Quantum Communication<br>• Unmanned Aerial Systems and Robotics |
| 5 | Chemical Engineering | **B.E. / B.Tech. in Chemical Engineering / Chemical Technology**<br><br>**M.E. / M.Tech. in Chemical Engineering/ Allied Branches**<br><br>**Ph. D. in relevant discipline.** | • Biochemical Engineering<br>• Chemical System Modelling<br>• Colloids and Interface Science<br>• Computational Modelling<br>• Electrochemical Engineering<br>• Energy Storage<br>• Environmental Engineering<br>• Fluid and Granular Mechanics<br>• Machine Learning and Artificial Intelligence in Chemical Engineering<br>• Nanotechnology<br>• Pharmaceutical Technology<br>• Reaction Engineering<br>• Separation Techniques<br>• Sustainability |
| 6 | Civil Engineering | **B.E./B.Tech./B.S./B.Plan. /B. Arch.** or equivalent in Civil Engineering<br><br>**M.E./M.Tech./M.Plan./M.S.** or equivalent in Master of Town and Regional Planning (MTRP) / Planning / Urban Planning / Urban & Rural Planning / Town & Country Planning / Urban and Regional Planning / Regional Planning / Town Planning / City Planning / Construction & Project Management / Construction | • Sustainable Planning<br>• Smart City Planning<br>• Sustainable Infrastructure Planning<br>• Housing<br>• Livable City Planning<br>• Walkable City Planning<br>• Heritage Conservation and Planning<br>• Application of AI – ML in Planning<br>• Application of Geo-informatics in Planning |

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| | | Technology and Management / Construction Engineering and Management / Infrastructure Engineering and Management<br><br>**Ph.D.** in a relevant discipline of Urban Planning [A specialization in **Urban Planning** shall only be recognized where the candidate demonstrates **documented completion of coursework from recognized universities (earned credits) and peer-reviewed publication(s)** in the domain of Urban Planning], or in a relevant discipline of Construction & Project Management or Construction Technology and Management or Construction Engineering and Management or Infrastructure Engineering and Management [A specialization in **Construction Technology and Management** shall only be recognized where the candidate demonstrates **documented completion of coursework from recognized universities (earned credits) and peer-reviewed publication(s)** in the domain of Construction Management]. | • Climate Resilience Planning<br>• Water Sensitive Planning<br>• Nature-based Planning<br>• Tourism Planning<br>• Eco-sensitive Planning<br>• Construction Technology & Management<br>• Construction Project Management<br>• Project Planning and Control<br>• Construction Economics and Finance<br>• Construction Automation<br>• Construction Quality and Safety Management<br>• Building Information Modelling<br>• Digital Technology<br>• Internet of Things<br>• Robotics<br>• 3D Printing<br>• Equipment management<br>• Resilient and sustainable infrastructure |
| 7 | Mechanical Engineering | **B.E./B.Tech.** or equivalent in Mechanical Engineering/ Production Engineering/ Mechanical & Production Engineering/ Design Engineering/ Industrial Engineering/ Thermal Engineering/ Production & Industrial Engineering/ / Manufacturing Processes and Automation Engineering/ Manufacturing Engineering / Automobile Engineering<br><br>**M.E./M.Tech**. or equivalent in Mechanical Engineering /Design/Industrial/Production/ | **Robotics and Dynamical Systems**<br>- Mechatronics<br>- Soft Robotics<br>- Design of Robotic Systems<br>- Nonlinear Dynamics<br>- Autonomous Systems<br>- AI in Robotics<br>**Solid Mechanics and Design**<br>- Machine Design<br>- Design and Dynamics<br>- CAD/CAM<br>- Vibrations<br>- Fracture Mechanics<br>- Constitutive Modeling of Materials<br>- Contact Mechanics |

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| | | Thermal or any other relevant Specialization of Mechanical Engineering / CAD-CAM / Thermal System Design / Manufacturing Engineering / Turbomachines & Propulsion<br><br>**Ph.D.** in relevant discipline. | - Damage Mechanics<br>- Advanced Materials and Composites<br>**Micro/Nano Mechanics**<br>- Micro/Nanoscale Mechanics and Materials<br>- Non-local Elastodynamics<br>- Micro/Nano-Electromechanical Systems (MEMS/NEMS)<br>- Microfluidics<br>- Nano Tribology<br>- Nanotechnology<br>**Manufacturing and Industrial Engineering**<br>- Advanced Manufacturing Methods<br>- Micro-manufacturing<br>- Additive Manufacturing<br>- Digital Manufacturing / Industry 4.0<br>- Metal Forming<br>- Laser Surface Engineering<br>- Production Engineering<br>- Manufacturing in Microgravity<br>**Thermal and Fluid Engineering**<br>- Computational Fluid Dynamics (CFD)<br>- High-Speed Flow<br>- Turbomachines and Jet Propulsion<br>- Bio-heat Transfer<br>- Biofluidics<br>- Geo-physical Fluid Dynamics<br>- Cryogenics<br>- Non-intrusive Experimental Techniques<br>**Energy and Combustion**<br>- Energy Harvesting and Conversion<br>- Combustion<br>- Sustainable Energy Systems<br>- Hydrogen Economy and Fuel Cells<br>**Biomechanics and Bioengineering**<br>- Biomechanics<br>- Biomaterials and Tissue |

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| | | | Engineering<br>- Bio-inspired Design<br>- Biologically Inspired Materials<br>**AI and Optimization**<br>- AI Applications in Mechanical Engineering<br>- Machine Learning<br>- Optimization<br>- Operations Research<br>**Emerging Areas**<br>- Digital Twin Technology<br>- Cyber-Physical Systems<br>- Wearable Technology and Smart Fabrics<br>- Advanced Aerodynamics and Flow Control<br>- Tissue Engineering and Regenerative Medicine<br>- Space Exploration Technologies<br>**Other Relevant Areas**<br>- Automobile Engineering<br>- Maintenance and Safety Engineering<br>- Welding |
| 8 | Physics | **Bachelor Degree** in Physics or Engineering Physics<br><br>**Master Degree** in Physics or equivalent<br><br>**Ph.D.** in relevant discipline. | • Quantum Computing/Quantum Communications/ Quantum Sensing/ Quantum Materials<br>• Optics and Photonics<br>• Plasma Physics<br>• Semiconductor Physics and Devices<br>• Electronics<br>• Cosmology, Astrophysics, and Space Science<br>• Condensed Matter Physics<br>• Materials Sciences<br>• Computational Nanoscience |

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| 9 | Chemistry | **B.Sc.** (Chemistry as one of the subjects)<br><br>**M.Sc.** in Chemistry/Organic / Inorganic / Analytical / Physical Chemistry<br><br>**Ph.D.** in the area of chemistry | Chemistry/Organic / Inorganic / Analytical / Physical Chemistry |
| 10 | Humanities and Social Sciences | B.A./B.Sc. or equivalent in Psychology/English<br><br>M.A./M. Sc. or equivalent in Counselling Psychology/English<br><br>Ph.D.in Counselling Psychology/English | World literature/ Linguistics/ English Language Teaching/ American Literature/ Translation Studies/ Critical Theory/ Counselling Psychology/ Gender Studies/ Indian English Fiction/ Postcolonial Fiction/ Communication Skills / Employability Skills/ Film Studies/ |