Annexure-I

1. Desirable areas of specialization

Sl. No.	Department	Post and Pay Level in 7th CPC	Area of specialization
1.	Architecture (AR)	Assistant Professor (Grade-I) Pay Level 12	B.Arch. and M.Arch. / M.Plan / M.Des. General Architecture, Landscape Architecture, Planning, Town Planning, Urban Planning, Urban and Rural Planning, City Planning, Energy efficient and sustainable architecture, Digital Architecture, Building Engineering and Management, Building Technology, Urban Design, Conservation, Housing, Environmental planning.
2.	Chemical Engineering (CH)	Assistant Professor (Grade-I) Pay Level 12	B.E. / B.Tech. or equivalent in Chemical Engineering and M.E. / M.Tech. in Chemical Engineering and related specializations. Ph.D. specializations: Semiconductor for sensing, Optoelectronics and energy systems, Molecular Dynamics(MD) Simulations, Disordered Materials, Super cooled liquids and Glassy States, Phase transition of Super cooled liquid.
		Professor Pay Level 14A	B.E. / B.Tech. or equivalent in Chemical Engineering and M.E. / M.Tech. in Chemical Engineering and related specializations. Ph.D. in any of the following specializations: Biochemical engineering, wealth from waste, environment engineering, Bio Electrochemical system, bio hydrogen production.
3.	Chemistry (CY)	Assistant Professor (Grade-II) Pay Level 10	Analytical Chemistry, Inorganic Chemistry, Organic Chemistry and Physical Chemistry
		Assistant Professor (Grade-I) Pay Level 12	
4.	Civil Engineering (CV)	Assistant Professor (Grade-II) Pay Level 10	B.E/ B.Tech. in Civil Engineering and M.E. or M.Tech. in the following specializations: Construction Technology and Management/ Construction Engineering and Management/Infrastructure Engineering and Management/Building Technology and Construction Management with Ph.D. in the following areas of research: Building Information Modeling, Construction Contracts Management, Construction Automation and Digitalisation (use of AI/ML, IoTs, Digital Twin), Construction and Demolition Waste Management, Sustainability in Construction, Infrastructure Project and Asset Management, Simulation based Analysis and Modeling of Construction Operations, Environmental Engineering with Ph.D. in the following areas of research: Water Treatment, Domestic & Industrial Wastewater Treatment, Biodegradation of Industrial Wastewater, Biochemical Processes in Wastewater Treatment, Solid and Hazardous Waste Management, Sludge Management, Environmental Impact, Risk Assessment and Management Geotechnical Engineering with Ph.D. in the following areas of research: Computational Geomechanics, Rock Mechanics, Underground Excavations and Tunnelling, Soil Dynamics and Geotechnical Earthquake Engineering.

		Assistant Professor (Grade-I) Pay Level 12	B.E/ B.Tech. in Civil Engineering and M.E. or M.Tech. in Structural Engineering with Ph.D. in the following areas of research. Warping Influence on Cold-Formed Steel and Chloride-Induced Corrosion in RC Structures.
		Professor Pay Level 14A	B.E/ B.Tech. in Civil Engineering and M.E. or M.Tech. in Remote Sensing with Ph.D. in Geospatial Technology in Urban Planning/Transportation Planning.
5.	Computer Applications (CA)	Assistant Professor (Grade-II) Pay Level 10	B.Sc. / BCA or any equivalent undergraduate degree and M.Sc (CS/IT or equivalent) / MCA or any equivalent P.G. degree in relevant discipline (OR) B.E. / B.Tech. or equivalent and M.E. / M.Tech. in CSE / IT / Equivalent, and Ph.D. in any one of the following Specializations: Graph Theory and its Algorithms, Cryptography, Quantum Computing (OR) Relevant to Computer Science and Applications
		Assistant Professor (Grade-I) Pay Level 12	B.Sc. / BCA or any equivalent undergraduate degree and M.Sc (CS/IT or equivalent) / MCA or any equivalent P.G. degree in relevant discipline (OR) B.E. / B.Tech. or equivalent and M.E. / M.Tech. in CSE / IT / Equivalent, and Ph.D. in any one of the following Specializations:
		Associate Professor Pay Level 13A2	High Performance Computing, Data Analytics, Block Chain Technology, Software Engineering, Microservices, Serverless Computing, Computer Vision, Artificial Intelligence, Machine Learning, Natural Language Processing, Image and Video processing, Few Shot Learning, Computational Intelligence, Optimization Techniques, Operating Systems, Deep Learning, Soft Computing, Sensor Networks, Data Science, Cyber Security
6.	Computer Science and Engineering (CS)	Assistant Professor (Grade-II) Pay Level 10	B.E. / B.Tech. or equivalent in CS / CSE / IT and M.E. / M.Tech. / M.S. in CSE / IT or equivalent and Ph.D. in any one of the following. The equivalent degree will be decided by the department committee. Specializations: Embedded Systems, Computer Architecture, Theoretical Computer Science, Algorithms, Graph Theory, Computational Geometry, Distributed Systems and Computing, Cloud Computing, High Performance Computing, Quantum Computing, IoT, Databases, Natural Language Processing, Data Science, Computer Networks, Mobile Systems, Wireless Sensor Networks, Software Engineering, Software Systems, Information Security, Blockchain Technology, Cryptography, Machine and Deep Learning, Artificial Intelligence, Parallel Computing, Operating Systems, Computer Vision, Image processing, Augmented and Virtual Reality, Bio-informatics.
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B.Tech. or equivalent in CS / CSE / IT and M.E. / M.Tech. / M.S. in CSE / IT or equivalent and Ph.D. in any one of the following. The equivalent degree will be decided by the department committee. Specializations: Embedded Systems, Computer Architecture, Theoretical Computer Science, Algorithms, Graph Theory, Computational Geometry, Distributed Systems and Computing, Cloud Computing, High Performance Computing, Quantum Computing, IoT, Databases, Natural Language Processing, Data Science, Computer Networks, Mobile Systems, Wireless Sensor Networks, Software Engineering, Software Systems, Information Security, Blockchain Technology, Cryptography, Machine and

			Deep Learning, Artificial Intelligence, Parallel Computing, Operating Systems, Computer Vision, Image processing, Augmented and Virtual Reality, Bio-informatics.
7.	Electrical and Electronics Engineering (EE)	Assistant Professor (Grade-II) Pay Level 10	B.E./B.Tech. in Electrical and Electronics Engineering / Electrical Engineering. M.E./M.Tech. in Electrical Machines, Power Systems, Power Electronics, High Voltage Engineering, Control Systems Robotics, Instrumentation and Control, Bio-medical Instrumentation, Electronics Engineering, Applied Electronics, Embedded Systems, Sensors and IoT, VLSI Systems, Communication Systems, Mechatronics, Avionics, Computer Science and Engineering, Data Analytics, Artificial Intelligence, Machine Learning or Equivalent. Ph.D. in the relevant area.
		Assistant Professor (Grade-I) Pay Level 12	B.E./B.Tech. in Electrical and Electronics Engineering / Electrical Engineering. M.E./M.Tech. in Electrical Engineering/ Power Systems/Power Electronics. Ph.D. in the area relevant to Electrical and Electronics Engineering.
		Professor Pay Level 14A	B.E./B.Tech. in Electrical and Electronics Engineering / Electrical Engineering. M.E./M.Tech. in Energy Systems. Ph.D. in the area relevant to Electrical Machines / Power Systems / Power Electronics & Drives.
8.	Electronics and Communications Engineering (EC)	Assistant Professor (Grade-II) Pay Level 10	B.E./B.Tech. in Electronics and Communication Engineering, Electronics and Telecommunication Engineering, Electronics Engineering/Technology, Electrical Communication Engineering, Electronics and Electrical Communication Engineering M.E. / M.Tech./M.S. in Microelectronics, Embedded System, Embedded system automation. VLSI System /Design/Technology, VLSI Design and Automation Techniques, Communication Systems, Signal Processing, Internet of Things, Sensor and Internet of Things, Artificial intelligence and data science, Artificial Intelligence and Machine Learning. Ph.D. in Microelectronics, Embedded System, Embedded system automation. VLSI System/Design/Technology, VLSI Design and Automation Techniques, Communication Systems, Signal Processing, Internet of Things, Sensor and Internet of Things, Artificial intelligence and data science, Artificial Intelligence and Machine Learning.
		Assistant Professor (Grade-I) Pay Level 12	B.E./B.Tech. in Electronics and Communication Engineering, Electronics and Telecommunication Engineering, Electronics Engineering/Technology, Electrical Communication Engineering, Electronics and Electrical Communication Engineering M.E./M.Tech./M.S. in Microelectronics, Embedded System, Embedded system automation.VLSI System/Design/Technology, VLSI Design and Automation Techniques, Communication Systems, Signal Processing, Internet of Things, Sensor and

			Internet of Things, Artificial intelligence and data science, Artificial Intelligence and Machine Learning.

Ph.D. in Microelectronics, Embedded System, Embedded system automation. VLSI System/Design/Technology, VLSI Design and Automation Techniques, Communication Systems, Signal Processing, Internet of Things, Sensor and Internet of Things, Artificial intelligence and data science, Artificial Intelligence and Machine Learning. |
| 9. | Energy and Environment (EN) | Assistant Professor (Grade-I) Pay Level 12 | B.E./B.Tech. in Mechanical Engineering and M.E./M.Tech. in Thermal Engineering. Specialization in Natural Convection in Magnetic Nanofluids.

B.E./B.Tech. or equivalent in Electrical and Electronics Engineering / Electrical Engineering and M.E./M.Tech. or equivalent in Energy Engineering / Renewable Energy Engg. / Energy conservation and management /Power and energy Engineering/ Power Electronics/Power Systems/Control System/ or any other relevant electrical engineering discipline. Doctoral (preferably from an energy centre or energy department)/ postdoctoral /industry / R&D work predominantly focused on energy aspects of renewable energy systems / alternative energy systems /advanced energy technologies/solar photovoltaic power generation/ANN modelling of solar PV. |
		Associate Professor Pay Level 13A2	B.E./B.Tech. or equivalent in Electrical and Electronics Engineering / Electrical Engineering and M.E./M.Tech. or equivalent in Energy Engineering / Renewable Energy Engg. / Energy conservation and management /Power and energy Engineering/ Power Electronics/Power Systems/Control System/ or any other relevant electrical engineering discipline. Doctoral (preferably from an energy centre or energy department)/ postdoctoral /industry / R&D work predominantly focused on energy aspects of renewable energy systems / alternative energy systems /advanced energy technologies.
10.	Humanities and Social Sciences (HS)	Assistant Professor (Grade-I) Pay Level 12	English Language and Literature
		Professor Pay Level 14A	
11.	Instrumentation and Control Engineering (IC)	Assistant Professor (Grade-II) Pay Level 10	B.E. / B.Tech. and M.E./M.Tech. in Electrical sciences with Research Specialization in Artificial intelligence for measurement and control applications/ Cyber Physical Systems / Cyber Security / Automotive instrumentation systems.
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B. Tech.in Electrical science and M.E./M.Tech. in Instrumentation/Control Engineering related area with Research Specialization in Artificial intelligence for measurement and control applications in Cyber Physical Systems / Cyber Security / Opto-mechatronic instrumentation system/Automotive instrumentation systems/ Fractional order sliding controller design
		Associate Professor Pay Level 13A2	B.E. / B. Tech. in Electronics and Instrumentation and M.E./M.Tech. in Instrumentation Engineering, with Research Specialization in Optimal/fractional order PID controller design with experience in practical implementation.

12.	Management Studies (MG)	Assistant Professor (Grade-II) Pay Level 10	Full time regular UG degree. Two years full time P.G. degree in Master of Business Administration. Ph.D. in Management/Business Administration with specialization in Operation and Data Analytics/Information Management/ General Management.
		Assistant Professor (Grade-I) Pay Level 12	Full time regular UG degree. Two years full time P.G. degree in Master of Business Administration. Ph.D. in Management/Business Administration with specialization in Operation and Data Analytics/Information Management/ General Management.
13.	Mathematics (MA)	Assistant Professor (Grade-II) Pay Level 10	Algebra, Probability and Statistics, Number theory, Combinatorics, Algebraic Topology, Harmonic Analysis & Operations research.
		Assistant Professor (Grade-I) Pay Level 12	Algebra, Probability and Statistics, Number theory, Combinatorics, Algebraic Topology, Harmonic Analysis & Operations research, Numerical Analysis.
		Professor Pay Level 14A	Bio Fluid Mechanics.
14.	Mechanical Engineering (ME)	Assistant Professor (Grade-II) Pay Level 10	B.E./ B.Tech. in Mechanical Engineering. M.E./ M.Tech./M.S. in Mechanical/ Thermal/ Design/ Industrial Safety Engineering/ Energy Engineering/any other fields relevant to Mechanical Engineering. Ph.D. Specialization in Design/ Thermal/ Safety/ Mechanics/ Dynamics/ Fluid/ Heat Transfer/ Energy Engineering/ Mechatronics/ Robotics/ AI and Machine Learning/ Manufacturing/Aerospace/ Ergonomics.
		Assistant Professor (Grade-I) Pay Level 12	B.E./ B.Tech. in Mechanical Engineering. M.E./ M.Tech./M.S. in Mechanical/ Thermal/ Design/ Industrial Safety Engineering/ Energy Engineering/any other fields relevant to Mechanical Engineering. Ph.D. Specialization in Design/ Thermal/ Safety/ Mechanics/ Dynamics/ Fluid/ Heat Transfer/ Energy Engineering/ Mechatronics/ Robotics/ AI and Machine Learning/ Manufacturing/Aerospace/ Ergonomics.
		Professor Pay Level 14A	B.E./ B.Tech. in Mechanical Engineering. M.E./ M.Tech. /M.S. in Refrigeration & Air Conditioning/Manufacturing Technology. Ph.D. in Refrigeration & Air Conditioning/ Air Compressor.
15.	Metallurgical and Materials Engineering (MT)	Assistant Professor (Grade-II) Pay Level 10	B.E/B.Tech in Metallurgical and Materials Engineering, Metallurgy, Materials Science, Metallurgy and Material Science and PG in Metallurgy/Metallurgical Engineering / Metallurgical and Materials Engineering / Metallurgical Engineering and Materials Science / Materials Science and Engineering / Materials Engineering / Steel Technology / Advanced Materials / Physical Metallurgy / Extractive Metallurgy / Mechanical Metallurgy, Industrial Metallurgy, Welding Engineering, Foundry Engineering, Semiconductor Technology, related specialization of Metallurgy and Materials Engineering.
		Assistant Professor (Grade-I) Pay Level 12	Ph.D. with specialization in Process Metallurgy, Extractive Metallurgy, Non-Metallic Materials, Physical Metallurgy, Non-destructive testing, Computational Materials Science, Mechanical behavior of Materials OR Any emerging area of specialization related to its disciplines in Metallurgy /

			Metallurgical Engineering / Metallurgical and Materials Engineering / Metallurgical Engineering and Materials Science / Materials Science and Engineering / Ceramic Engineering /Polymer Technology / Electro-chemical Engineering
16.	Physics (PH)	Assistant Professor (Grade-I) Pay Level 12	B.Sc. (Physics) /B.Tech. (engineering physics) or equivalent / M.Sc. (Physics) /M.Sc. (Applied Physics)/M.Sc. (Materials Science) Ph.D. in any of the following specializations: Theoretical Condensed Matter Physics, Theoretical High Energy Physics, Biophysics & Soft matter Physics
17.	Production Engineering (PR)	Assistant Professor (Grade-II) Pay Level 10	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial Engineering/ Mechatronics / Automobile Engineering. M.E. / M.Tech. / M.S. in Manufacturing Technology, Production Technology, Production Engineering, Manufacturing Engineering, Manufacturing Science, Industrial Engineering, Industrial Management, Industrial Systems Engineering, Operations Research, Operations Management, Supply Chain Management, Supply Chain Analytics, Logistics Management, CIM, Maintenance Engineering, Product design and development, CAD & Manufacturing, Mechatronics Engineering, CAD/CAM and Automation, Additive Manufacturing, Integrated Design and Manufacturing. Ph.D. field of Specialization: Operations Research, Operations Management, Supply Chain Management, Supply Chain Analytics, Logistics Management, Data Analytics / Data Science, Maintenance Engineering, Quality Engineering, Flexible Manufacturing, Smart Manufacturing, Digital Manufacturing, Supply Chain Management, System simulation, Robotics, Automation, Industry 4.0, Artificial Intelligence in Manufacturing Technology, and Artificial Intelligence in Industrial Engineering, Advanced Materials and Processes, Quantum and Edge Computing in Manufacturing Technology, Quantum and Edge Computing in Industrial Engineering.
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial Engineering/ Mechatronics / Automobile Engineering. M.E. / M.Tech. / M.S. in Manufacturing Technology, Production Technology, Production Engineering, Manufacturing Engineering, Manufacturing Science, Industrial Engineering, Industrial Management, Industrial Systems Engineering, Operations Research, Operations Management, Supply Chain Management, Supply Chain Analytics, Logistics Management, CIM, Maintenance Engineering, Product design and development, CAD & Manufacturing, Mechatronics Engineering, CAD/CAM and Automation, Additive Manufacturing, Integrated Design and Manufacturing. Ph.D. field of Specialization: Operations Research, Operations Management, Supply Chain Management, Supply Chain Analytics, Logistics Management, Data Analytics / Data Science, Maintenance Engineering, Quality Engineering, Flexible Manufacturing, Smart Manufacturing, Digital Manufacturing, Supply Chain Management, System simulation, Robotics, Automation, Industry 4.0, Artificial Intelligence in Manufacturing Technology, and Artificial Intelligence in Industrial Engineering, Advanced Materials and Processes, Quantum and Edge Computing in Manufacturing Technology, Quantum and Edge Computing in Industrial Engineering.

		B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial Engineering.
Professors Pay Level 14A		M.E. / M.Tech. / M.S. in Manufacturing Technology, Production Technology, Production Engineering, Manufacturing Engineering, Manufacturing Science, Industrial Engineering, Industrial Management, Industrial Systems Engineering, CIM, Maintenance Engineering, Product design and development, CAD & Manufacturing, Mechatronics Engineering, CAD/CAM and Automation, Additive Manufacturing, Integrated Design and Manufacturing. Ph.D. field of Specialization: Supply Chain Management, System Simulation, Evolutionary Optimization, Polymer Composites, Advanced Manufacturing, Polymer Joining, Tribology, Metal Cutting Process, Additive Manufacturing, CAD/CAM/CIM.

2. Vacancy Matrix

The vacancy matrix for the faculty positions at National Institute of Technology Tiruchirappalli is as under:

Sl. No.	Post and Pay Level in 7th CPC	Vacancy					
		UR	OBC	SC	ST	EwS	Total
1.	Assistant Professor (Grade-II) Pay Level 10	13 (CS-02, EE-01, EC-01, MG-01, MA-02, ME-03, MT-01, PR-02)	9+4* (EE-01, CY-02, CV-02, CA-01, CS-01, IC-01, MG-01, MA-01, ME-03)	01 (CV)	02* (CY-01, MT-01)	06 (CA-01, EC-01, IC-01, MA-01, MT-01, PR-01)	35
2.	Assistant Professor (Grade-I) Pay Level 12	03 (ME-01, MT-01, CS-01)	-	01 (CV)	01+03* (AR-01, MG-01, MA-01, ME-01)	-	08
3.	Associate Professor Pay Level 13A2	01 (CA)	-	01 (EN)	-	-	02
4.	Professor Pay Level 14A	02 (CV-01, PR-01)	-	01 (ME)	01 (HS)	-	04
	TOTAL	19	13	04	07	06	49

Total Number of PwD Vacancies : 10
PwD Reservation is as per GoI norms.

* Backlog vacancies.