

Annexure-I

1. Desirable areas of specialization

Sl. No.	Department	Post and Pay Level in 7 th CPC	Area of specialization
1.	Architecture (AR)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	B.Arch. and M.Arch. / M.Plan / M.Des / equivalent General Architecture, Landscape Architecture, Planning, Town Planning, Urban Planning, City Planning, Energy efficient and sustainable architecture, Digital Architecture, Building Engineering and Management, Building Technology, Urban Design, Conservation, Housing and Design.
		Assistant Professor (Grade-I) Pay Level 12	
		Professor Pay Level 14A	
2.	Chemical Engineering (CH)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	B.E. / B.Tech. or equivalent in Chemical Engineering and M.E./M.Tech. in Chemical Engineering and related specializations. Ph.D. specializations: Computational Chemical Engineering, Advanced Materials.
		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: Mathematical Modelling and Thermodynamics, Process Control, Advanced materials
		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: Transfer operations, Particulate technology, Thermodynamics, Process integration and optimization, Biochemical engineering, Advanced materials, Waste Valorization, Biorefinery engineering and advance wastewater treatment.
3.	Chemistry (CY)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	Inorganic Chemistry, Organic Chemistry, Physical Chemistry & Analytical Chemistry
		Assistant Professor (Grade-I) Pay Level 12	
		Professor Pay Level 14A	
4.	Civil Engineering (CV)	Assistant Professor (Grade-II) Pay Level 10	Ph.D. in desired area of specialization with B.Tech. / B.E. in Civil Engineering and M.E. or M.Tech. in the following specializations: <u>Environmental Engineering:</u> Environmental Chemistry, Advanced water and waste water treatment, Air pollution management and modelling. <u>Construction Technology and Management:</u> Lean Construction practices with supply chain management, building information modelling, project management with automation and digitalization planning in construction, value engineering. <u>Transportation Engineering:</u> Transportation Systems planning, Transportation network analysis and optimization <u>Water resources engineering:</u> Subsurface Hydrology, stochastic hydrology, sediment transport modelling, hydrologic extremes modelling. <u>Remote sensing:</u> Hyperspectral remote sensing and applications, microwave remote sensing and applications, GIS and GPS and its applications.

		Assistant Professor (Grade-II) Pay Level 11	Ph.D. in desired area of specialization with B.Tech. / B.E. in Civil Engineering and M.E. or M.Tech. in the following specializations: <u>Structural Engineering</u> : Warping Influence on Cold-Formed Steel, Chloride-Induced Corrosion in RC Structures. <u>Transportation Engineering</u> : Pavement performance modelling of low volume village roads
		Assistant Professor (Grade-I) Pay Level 12	Ph.D. in desired area of specialization with B.Tech. / B.E. in Civil Engineering and M.E. or M.Tech. in the following specializations: Structural Engineering: Condition assessment of reinforced concrete system; steel-concrete and composites; Uncertainty modelling and Sensitivity analysis of structures; Structural Dynamics and Vibration Control Water resources Engineering: Urban Climate Modelling Transportation Engineering: Traffic Modelling, pavement performance modelling of low volume village roads Environmental Engineering: Advanced water treatment.
		Professor Pay Level 14A	Ph.D. in desired area of specialization with B.Tech. / B.E. degree in Civil Engineering and M.E. or M.Tech. in the following specializations: GIS and remote sensing: Geospatial Technology in Urban Planning, Transportation Planning, Structural Health Monitoring. Structural Engineering: Semi-light weight concrete with cold bonded aggregates.
5.	Computer Applications (CA)	Assistant Professor (Grade-II) Pay Level 10	Blockchain Technology, IoT, Service-oriented Architecture, Full Stack Development, Software Reliability.
		Assistant Professor (Grade-II) Pay Level 11	Computer Networks, Cyber Security, Image Processing, Computer Vision
		Assistant Professor (Grade-I) Pay Level 12	
		Associate Professor Pay Level 13A2	
		Professor Pay Level 14A	Data Compression, Image Processing, Computer Vision, Computer Organization and Architecture, Cloud Computing, Big Data Analytics.
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 and Ph.D. in any one of the following Specializations: Computer Architecture, Hardware Systems, Embedded Systems, Networking, Data Science, Knowledge Engineering.
		Assistant Professor (Grade-II) Pay Level 11	B.E. / B.Tech. in CS / CSE / IT and M.E. / M.Tech. / M.S. in CSE / IT / Equivalent, and Ph.D. in any one of the following Specializations: Theoretical Computer Science, Algorithms, Graph Theory, Game theory, Computer Architecture, Microprocessors and Microcontrollers, Embedded Systems, Parallel Computing, High Performance Computing, Operating Systems, Computer Networks, Distributed Systems and Computing, Cloud Computing and Fog Computing, Internet of Things, Databases, Big Data Analytics, Data Science, Software Engineering, Software Systems, Information retrieval, Information Security, Hardware Security, Artificial Intelligence, Machine Learning and Deep Learning, Natural Language processing, Speech and Vision, Augmented and Virtual reality, Quantum Computing, Knowledge Engineering, Indian Knowledge system.
		Assistant Professor (Grade-I) Pay Level 12	
		Associate Professor Pay Level 13A2	
		Professor Pay Level 14A	

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 area relevant to Electrical and Electronics Engineering
		Assistant Professor (Grade-II) Pay Level 11	B.E./B.Tech. in Electrical and Electronics Engineering / Electrical Engineering M.E./M.Tech. in Power Systems/Power Systems Engineering, Electrical Power Systems Management, Power Electronics, Power Electronics & Drives, Industrial Drives & Control Ph.D. in the area relevant to Electrical and Electronics Engineering
		Assistant Professor (Grade-I) Pay Level 12	B.E./B.Tech. in Electrical and Electronics Engineering / Electrical Engineering M.E./M.Tech. in Power Systems/Power Systems Engineering, Electrical Power Systems Management, Power Electronics, Power Electronics & Drives, Industrial Drives & Control 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 Electrical Drives & Control, Energy Systems, Applied Electronics Ph.D. in the area relevant to Electrical and Electronics Engineering
8.	Electronics and Communications Engineering (EC)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	B.E./B.Tech. in Electronics and Communication Eng., Electronics and Telecommunication Eng., Electronics Eng., Electrical Communication Eng. M.E. / M.Tech. 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 Eng., Electronics and Telecommunication Eng., Electronics Eng., Electrical Communication Eng. M.E./M.Tech. in Microelectronics, VLSI System / Design / Technology, Communication Systems, Signal Processing, Microwave Engineering and Wireless communication. Ph.D. in Microelectronics, VLSI System/Design/Technology, Communication Systems, Signal Processing, Microwave Engineering and Wireless communication.
		Associate Professor Pay Level 13A2	B.E./B.Tech. in Electronics and Communication Eng., Electronics and Telecommunication Eng., Electronics Eng., Electrical Communication Eng. M.E. / M.Tech. in Signal Processing, Microwave Engineering and Optical Engineering. Ph.D. in Signal Processing, Microwave Engineering and Optical Engineering.

		Professor Pay Level 14A	B.E./B.Tech. in Electronics and Communication Eng., Electronics and Telecommunication Eng., Electronics Eng., Electrical Communication Eng. M.E. / M.Tech. in Communication Systems, Applied Electronics, Microwave Engineering and Optical Engineering. Ph.D. in Signal Processing, Microwave Engineering, Optical Engineering and Wireless Networks
9.	Energy and Environment (EN)	Assistant Professor (Grade-II) Pay Level 10	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.
		Assistant Professor (Grade-II) Pay Level 11	B.E./B.Tech. in Electrical and Electronics Engineering and M.E. / M.Tech. in Energy Engineering. Specialization in Radiation Analysis / ANN modelling of solar PV. B.E./B.Tech. in Mechanical Engineering and M.E./M.Tech. in Thermal Engineering. Specialization in Natural Convection in Magnetic Nanofluids.
		Assistant Professor (Grade-I) Pay Level 12	B.E./B.Tech. in Mechanical Engineering and M.E./M.Tech. in Energy Engineering. Specialization in Biomass thermo- chemical conversion/value added products from biomass / biochar applications. B.E./B.Tech. in Electrical and Electronics Engineering and M.E./M.Tech. in Energy Engineering. Specialization in Radiation Analysis / ANN modelling of solar PV.
10.	Humanities and Social Sciences (HS)	Assistant Professor (Grade-II) Pay Level 10	For English: English Language and Literature For Economics: Economics
		Assistant Professor (Grade-II) Pay Level 11	For English: English Language and Literature, Gender Studies and Cultural Studies For Economics: Economics
		Assistant Professor (Grade-I) Pay Level 12	For English: Post Critical Studies, English Language Education, Second Language Learning For Economics: International Economics
		Professor Pay Level 14A	For English: English Language Teaching, 21st Century Skills Education For Economics: Industrial Economics, Entrepreneurship Development
11.	Instrumentation and Control Engineering (IC)	Assistant Professor (Grade-II) Pay Level 10	B.E. / B. Tech. in Instrumentation / Instrumentation and Control / Electronics and Instrumentation and PG in Instrumentation / Control / Applied Electronics, with Research Specialization in Artificial intelligence for measurement and control applications / Robotics in automation / Cyber Physical Systems / Cyber Security / Precision Measurement / Automotive instrumentation systems.
		Assistant Professor (Grade-II) Pay Level 11	B.E. / B. Tech. in Electronics and Instrumentation and PG in Instrumentation, with Research Specialization in Thin Film Sensors, Interfacing Circuits and Electronic Instrumentation.
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B. Tech. in Instrumentation and Control / Electronics and Instrumentation / Electronics and Communication and PG in Biomedical Engineering / Instrumentation Engineering, with Research Specialization in (i) Neural and Muscular Instrumentation systems and Signal processing for epilepsy diagnosis and human machine interface (ii) Hyperthermia treatment for cancer and passive wireless RFID sensors for condition monitoring and (iii) Thin Film Sensor, Interfacing Circuits and Electronic Instrumentation.

		Associate Professor Pay Level 13A2	B.E. / B. Tech. in Instrumentation and Control / Electronics and Instrumentation / Electronics and Communication and PG in Biomedical Engineering / Instrumentation Engineering, with Research Specialization in (i) Analog Electronics, Controller design and Process control, (ii) Diabetic foot biomechanics, Ulcer detection device, Diabetic neuropathy measurement system, Optical based device for disease diagnosis (iii) Neural and Muscular Instrumentation systems and Signal processing for epilepsy diagnosis and human machine interface and (iv) Hyperthermia treatment for cancer and passive wireless RFID sensors for condition monitoring.
		Professor Pay Level 14A	B.E. / B. Tech. in Electronics and Instrumentation / Electrical and Electronics and PG in Instrumentation Engineering / Process Control and Instrumentation, with Research Specialization in (i) Next generation predictive controller, networked control system, multiple model based controller design and (ii) Automation of augmentative exoskeletons, vibration energy harvesting.
12.	Management Studies (MG)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	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 Finance/Corporate Strategy/Business Policy/Entrepreneurship/Indian Ethos/Business Ethics/Business Law/Digital Business.
		Assistant Professor (Grade-I) Pay Level 12	Full time regular UG degree. Two years full time P.G degree in Master of Business Administration or Two years full time in M.E/M. Tech degree in Industrial Engineering/Management. Specialization in Master's degree with Human Resource Management and Organisational Behaviour /Marketing / Finance / Production and Operation Management. Ph.D. in Management/Business Administration with specialization in Human Resource Management and Organisational Behaviour / Marketing / Finance / Production and Operation Management.
		Associate Professor Pay Level 13A2	Full time regular UG degree. Two years full time P.G degree in Master of Business Administration with specialization in Human Resource and Organisational Behaviour. Ph.D. in Management/Business Administration with specialization in Human Resource and Organisational Behaviour.
		Professor Pay Level 14A	Full time regular UG degree. Two years full time P.G degree in Master of Business Administration with specialization in Information Systems / Information systems and Technology. Ph.D. in Management/Business Administration with specialization in Information Systems / Information systems and Technology.
13.	Mathematics (MA)	Assistant Professor (Grade-II) Pay Level 11	Probability and Stochastic Process, Numerical Analysis
		Assistant Professor (Grade-I) Pay Level 12	Fluid Mechanics, Statistical Mechanics, Partial Differential Equations
		Associate Professor Pay Level 13A2	Linear Algebra, Operations Research
		Professor Pay Level 14A	Fuzzy Decision Modelling, Numerical Analysis.

14.	Mechanical Engineering (ME)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	B.E. / B.Tech. in Mechanical Engineering. PG degree in Mechanical Design/ Engineering Design / Mechanical system Design / Industrial Safety Engineering / Quality Engineering / Thermal and fluid engineering / Turbomachines / Robotics / Mechatronics / Applied mechanics / Direct PhD. Area of specialization in Mechanics of Machines / vibration / Safety Engineering / Metrology and Quality control / Fluid Mechanics / Robotics / Mechatronics
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B.Tech. in Mechanical Engineering. PG degree in Engineering Design/Engineering Mechanics / Machine Design / Thermal Science and Engineering / Thermal Engineering / Direct PhD. Specialization in Molecular Dynamics / Atomistic Modelling / Nanomaterials/ Finite Element Method/ Modelling of Nanostructures / Nonlocal Theories/Particulate emissions from welding/ Biomechanics/Low-Temperature Combustion / Advanced Combustion Concepts/Structural Health Monitoring/Microfluidics/ Non-Newtonian Fluid Flow/Refrigeration and Cryogenics/granular mechanics and discrete element modeling.
		Associate Professor Pay Level 13A2	B.E. / B.Tech. in Mechanical Engineering. PG degree in Mechanical Engineering with specialization in Design and production engineering (machine Tools). Specialization in Welding.
		Professor Pay Level 14A	B.E. / B.Tech. in Mechanical Engineering. PG degree in Energy Conservation and Management/ Energy Engineering/Design and Production of Thermal Power Equipment/ Refrigeration and Air Conditioning /Engineering Design/Manufacturing Technology/CAD-CAM. Specialization in Alternative Fuels/Energy Engineering/Welding, Industrial Safety Engineering/ Renewable Energy/Refrigeration and Air Conditioning/Composite Materials/ MEMS/ Additive Manufacturing/CAD-CAM/Mechanical Measurements.
15.	Metallurgical and Materials Engineering (MT)	Assistant Professor (Grade-II) Pay Level 10 & Pay Level 11	Both UG and PG with first class 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. 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.
		Assistant Professor (Grade-I) Pay Level 12	
16.	Physics (PH)	Assistant Professor (Grade-II) Pay Level 10	B.Sc. (Physics) / equivalent and M.Sc. (Physics) /M.Sc. (Applied Physics)/M.Sc. (Materials Science) Ph.D. in any of the following specializations: Condensed Matter Experimental Physics, Materials Science, and Non-Destructive Evaluation.
		Assistant Professor (Grade-II) Pay Level 11	B.Sc. (Physics) / equivalent and M.Sc. (Physics) /M.Sc. (Applied Physics)/M.Sc. (Materials Science) Ph.D. in any of the following specializations Theoretical Astrophysics, Theoretical Condensed Matter Physics, Theoretical High Energy Physics, Biophysics & Soft matter Physics
		Assistant Professor (Grade-I) Pay Level 12	

		Professor Pay Level 14A	B.Sc. (Physics) / equivalent and M.Sc. (Physics) /M.Sc. (Applied Physics)/M.Sc. (Materials Science) Ph.D. in any of the following specializations: Thin film and Thin film Photovoltaic, Quantum information and computation, Ferroelectrics, Carbon Nanomaterials.
17.	Production Engineering (PR)	Assistant Professor (Grade-II) Pay Level 10	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial 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, 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: Operation Research, Data Analytics / Data Science, Maintenance Engineering, Quality Engineering, Smart Manufacturing, Supply Chain Management, System simulation, Robotics, Industry 4.0.
		Assistant Professor (Grade-II) Pay Level 11	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial 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, 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: Machine Design, Design and Manufacturing, Machining, Additive Manufacturing, Micromachining, Mechatronics, Metal forming.
		Assistant Professor (Grade-I) Pay Level 12	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial 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, 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: Metal Joining, Metal Forming, Advanced Machining. Machine Design, Design and Manufacturing, Machining, Additive Manufacturing, Micromachining, Mechatronics, Metal forming.
		Associate Professor Pay Level 13A2	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial 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, 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: Operation Research, Data Analytics / Data Science, Maintenance Engineering, Quality Engineering, Smart Manufacturing, Supply Chain Management, System simulation, Robotics, Industry 4.0.

		Professor Pay Level 14A	B.E. / B.Tech. in Production / Manufacturing / Mechanical / Industrial 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, 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, Friction Composites, Additive Manufacturing, CAD/CAM/CIM
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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 7 th CPC (AGP in 6 th CPC)	Vacancy					Total
		UR	OBC	SC	ST	EwS	
1.	Assistant Professor (Grade-II) Pay Level 10 (AGP Rs.6000)	27 (AR-1, CH-1, CY-1, CV-4, CA-1, EE-3, EC-1, EN-1, IC-1, MG-3, ME-5, MT-3, PR-2)	10 (2+8*) (AR-1, CY-1, CV-1, EE-1, EC-1, HS-1, MG-1, ME-1, MT-1, PR-1)	3 (CV-1, EE-1, MT-1)	3 (1+2*) (CH-1, CY-1, PH-1)	2 (CV-1, CS-1)	45
2.	Assistant Professor (Grade-II) Pay Level 11 (AGP Rs.7000)	-	-	2* (CY-1, EE-1)	4* (AR-1, MG-1, ME-1, MT-1)	-	6
3.	Assistant Professor (Grade-I) Pay Level 12 (AGP Rs.8000)	-	1* (CV)	1* (HS)	2* (CA-1, PR-1)	-	4
4.	Associate Professor Pay Level 13A2 (AGP Rs.9500)	3 (CA-1, EC-1, PR-1)	1 (MA)	1 (CS)	-	-	5
5.	Professor Pay Level 14A (AGP Rs.10500)	2 (CV-1, IC-1)	-	1 (ME)	1 (EC)	-	4

* Backlog vacancies