Annexure-I : List of projects for Summer Internship Program 2024 at NIT Meghalaya

A. LIST OF PROJECT TOPICS - EC DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Dr. Pradeep Kumar Rathore	(a)	Design & Simulation of MEMS Pressure Sensor for Soil Moisture Detection	2
		(b)	Exploring CMOS Circuits for Sensor and Readout Applications	2
		(c)	Design & Simulation of MEMS Cantilever based sensors	2
2	Dr. Shubhankar Majumdar	(a)	Design and Simulation of Wakeup Receiver Architecture	2
		(b)	Design and Simulation of Mixer First Receiver Architecture	2
		(c)	Development of Non-Destructive Testing Instrument	2
3	Dr. Prabir Kumar Saha	(a)	Design of Spiral Neural Network Core Architecture	2
		(b)	Post Quantum Cryptography	2
		(c)	Hardware Architecture for ML Algorithm	2
4	Dr. Abhishek Sarkhel	(a)	Intelligent Reflecting Surface for 6G Communication	1
		(b)	Reconfigurable Metasurface for Future Communication	1
		(c)	Metasurface for Radar Cross Section Reducton	1
5	Anup Dandapat	(a)	3-D Memory Design (CAM Based design)	1
		(b)	Memristor based memory design	1
		(c)	In-memory Computing	1

B. LIST OF PROJECT TOPICS - EE DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Ksh Milan Singh	(a)	E-vehicle design	1
		(b)	Capacitive Wireless Power Transfer	1
		(c)	Digital Phase locking Design for Harmonic Estimation	1
2	Piyush Pratap Singh	(a)	Control of coupled tank setup	1
		(b)	Control of Inverted pedulum with cart setup	1
		(c)	Control of Aerodynamics setup	1

C. LIST OF PROJECT TOPICS - CS DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Deepak Kumar	(a)	Design and Implementation of Sign language recognizer system	2
		(b)	Traffic data modeing using generative AI for smart transportation management	2
		(c)	Built area navigation assistance for visually and the physically disadvantaged	2
2	Diptendu Sinha Roy	(a)	Developing a data mining tool for smart inventory management recommendations	2
		(b)	Generative AI for time series forecasting	2
		(c)	Exploring Human-Centric Design in web application development with user Interviews and ethnographic research	2
3	Ningthoujam Johny Singh	(a)	Parallel corpus creation for low resource language	2
		(b)	Design and implementation of emotion detection system	2
4	Dr. A.P. Singh	(a)	Design and Development of Blockchain based application for Electric vehicle	2

		(b)	Design and Development of Blockchain and based AI application	2
		(c)	Use cases for beyond 5G and 6G for societal applications	2

D. LIST OF PROJECT TOPICS - CE DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Dibyendu Adak	(a)	Bacterial concrete	2
		(b)	Alkali activated Concrete	2
		(c)	Shrinkage and creep prediction model for AAC	2
2	Dr. G C Dhal	(a)	Nanotechnology for Sustainable Removal of Heavy Metals from Urban Water	2
		(b)	Assessing the Health Effects of Prolonged Exposure to Urban Air Pollution	2
		(c)	Techno-Economic Analysis of Various Waste-to-Energy Conversion Technologies.	2
3	Dr. Pradeep Kr Gautam	(a)	Assessment of secondary material in open grade friction course	2
		(b)	Mix design and assessment of bituminous mixes containing steel slag	2
		(c)	Development of Non-Destructive Testing Instrument (interdisciplinary)	2
4	Dr. Rubi Chakraborty	(a)	Landslide Hazard Zonation	2
		(b)	Rainfall Induced Slope Instability Study	2
		(c)	Stability Assessment of Municipal Solid Waste Landfill Slopes	2
5	Dr Susmita Sharma	(a)	Municipal solid waste (MSW) management: attempt to turning waste into resources	2
		(b)	Influential factors in atmospheric water generation: a solution to Global water scarcity problem	2

E. LIST OF PROJECT TOPICS - ME DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Dr. Bikash Kumar Sarkar	(a)	Design and development of the fish robot	1
		(b)	Design and development of the multi fingire gripper	1
		(c)	Simulation on solar thermal power plant	1
2	Dr. Kishore Debnath	(a)	Design and Development of Innovative Product using 3D Printing	1
		(b)	Design and Development of Innovative Product using Injection Molding	1
		(c)	Advanced Machining of Smart Materials	1
3	Dr. Sambit Majumder	(a)	Design of Virtual Laboratory for Fluid and Thermal Engineering	1
		(b)	Design and Development of Pedagogical Tools for High School Level Physics Concepts	2
		(c)	Development of a Computer Program to Generate Mesh from a CAD Model	2
4	Dr. Rajat Subhra Das	(a)	Dedicated outdoor air systems for nearly zero energy building	1
		(b)	Investigating the performance of an exhaust air heat & moisture recovery unit	1
		(c)	Development & performance evaluation of a space heating system model in TRNSYS	1
5	Dr. Md Nur Alom	(a)	A computational investigation to analyze the effects of	2

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
			different rotor parameters on hybrid hydrokinetic turbine performance	
		(b)	Effect of double deflector in a Vertical Axis Wind Turbine	2
		(c)	Aerodynamic effect of bicycle wheel cladding-A CFD study	2
6	Dr. Biplab Kumar Debnath	(a)	Design of control systems for Solar Thermal Devices	1
		(b)	Analysis of Dual Fuel Engine	1
		(c)	Exergy and economic analysis of Thermal Systems	1
7	Dr. Maneswar Rahang	(a)	Parametric Study of Photo Chemical Machining of Low Ductile Metals	1
		(b)	Surface Modification of Cast Iron By Electric Discharge Machining Process	1
		(c)	Surface Treatment of Metal and Non-Metal Using Rare Earth Metarial By Electro Phoretic Deposition Process	1
8	Dr. Koushik Das	(a)	Water Generation from Atmospheric Moisture using Heat Pipes	2
9	Dr. Subhendu Maity	(a)	Design and development of tabletop experimental setups for fluid mechanics concepts	2
		(b)	Design and development of a tabletop wind tunnel	2
		(c)	Design and 3evelopment of a thrust and torque measurement device for an underwater propeller	1
10	Dr. Moumita Tewary	(a)	Design and development of aerial robot by soft actuators	2

F. LIST OF PROJECT TOPICS - CY DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Dr. Atanu Singha Roy	(a)	Quantum Dots for LED Applications	1
		(b)	Protein-Ligand Binding Studies	1
		(c)	Hydrogel for Drug Delivery	1
2	Dr Naba Kamal Nath	(a)	Polymorph and surface wettability difference	1
		(b)	Ionic cocrystal of photoswitches	1
		(c)	light-induced wettability reversal of photoswitchable surfaces	1

G. LIST OF PROJECT TOPICS - MA DEPARTMENT

Sl. No.	Faculty Name	Project	Project Topic(s)	Available number of seats
1	Dr. Adarsha Kumar Jena	(a)	A study on linear regression models	1
		(b)	Statistical inference for the lifetime performance index of a distribution	1
		(c)	Estimating ratio of parameters of a distribution	1
2	Dr. Bidyasagar Kumbhakar	(a)	Numerical solution of two-point BVPs	1
		(b)	Nanofluid and hybrid nanofluid flows	1
3	Dr. Timir Karmakar	(a)	Hyperbolic Conservation Laws	1
		(b)	Asymptotic analysis and Perturbation Methods	1