



No. NITM-8/(11-Civil)/Admissions/2021/ 73

Dt: 28/07/2023

## NOTIFICATION

### Admissions: PhD (Civil Engineering) – July Session 2023

The following candidates are *provisionally* shortlisted for Written and onward Interview/Interview Tests for Admissions in the Department of Civil Engineering only under the three (3) specializations as: (I) Water Resources Engg (WR), (II) Geomatics Engg (GIS & RS), and (III) Environmental Engg. (Env)



Civil Engineering Department

**Written Test** : Date: **07/08/2023** & Time: **11:00 am → 12:30 pm**  
(only for Non-GATE/Non-NET category)

**Venue** : GIS & Computational Lab, Dept of Civil Engg  
<https://maps.app.goo.gl/RdYck5AzybHYpT996>

**Interview Test**: Date: **08/08/2023** & Time: **10:00 am → 01:00 pm**

- ❖ Candidates are advised to report to the venue at least 90 min prior to the scheduled test timings on the day/date of Tests for verification of the submitted documents; original documents, NoC in proper format are to be furnished.
- ❖ Only those Non-GATE/Non-NET Candidates who qualify in the Written Test will be eligible for the onward Interview Test.
- ❖ GATE/ NET qualified Candidates are directly eligible for the Interview Test.

### SHORTLISTED CANDIDATES

Sl No.	Name of Candidate	Category	Opted Specialization	Remarks
1	Neha Priyadarshini	SC	Water Resources (WR)	—
2	Khaidem Rosaline	OBC (CL)	Construction	opted specialization to be clarified
3	Khwairakpam Bidya Devi	OBC (NCL)	Environmental Engg. (Env)	—
4	Vikash Kumar Singh	SC	Env	—
5	Thokchom Amarishwar Singh	SC [ GATE ]	Structures	opted specialization to be clarified; B.Tech Marksheet to be provided
6	Atul Kumar	GEN / PT	Env/ WR	—
7	Meraimayum Sophiya	OBC (NCL)	WR/GIS & RS/Env	Updated OBC (NCL) certificate to be provided
8	Kewal Kumar Singh Ksh	GEN	Env	—
9	Jitender Kushwaha	OBC (NCL) [ GATE ]	WR/GIS & RS	—
10	Praveen Goud Udugula	OBC (NCL)	WR/GIS & RS	—
11	Khumukcham Naresh Singh	SC	GIS & RS	—
12	Syeda Ashma	GEN	WR	—
13	Sneha Elangbam	GEN	Transportation	opted specialization to be clarified
14	Guidin Gangmei	ST	WR	—
15	Sochanphi Kashung	ST [GATE]	WR	—
16	Jayalaxmi Ngasepam	OBC (NCL)	WR	—
17	Boynaoton Konthoujam	OBC (NCL)	Env /WR/GIS & RS	—
18	Lanngamba Salam	SC [ GATE ]	GIS & RS	—
19	Lemba Waikhom	GEN	Structures/GIS & RS/ Env /WR	opted specialization to be clarified



### CANDIDATE(S) NOT-SHORTLISTED

Sl No.	Name of Candidate	Category	Opted Specialization	Remarks
1	Renubala RK	GEN [ NET ]	GIS & RS	Master's degree M.A. in Geography

#### Important Instructions & Terms:

- 1) The above shortlisted candidates should submit clarifications sought, pending self-attested documents/testimonials **before 04/08/2023** via email ([koroulai@gmail.com](mailto:koroulai@gmail.com)) or in hard copies to the Head, Dept of Civil Engg., NIT Manipur.
- 2) Original documents/testimonials are to be produced at the reporting time for verification. **Candidates who fail to produce the original documents will be deemed as automatically "Not Qualified"**.
- 3) Qualified or Selected Candidates under Non-GATE/Non-NET category, are not eligible for GATE/MoE Stipend/Scholarships from the Institute, and any claims in this regard will be considered illegitimate.

28/07/2023

**(Dr. Ngangbam Romeji)**  
 PhD Coordinator,  
 Dept of Civil Engineering,  
 NIT Manipur

28/07/2023

**(Dr. Bakimchandra Oinam)**  
 Professor & Head,  
 Dept of Civil Engineering,  
 NIT Manipur

Sl No.	Name of Candidate	Category	Opted Specialization	Remarks
1	Nebo Prasad Singh	SC	Water Resources (WR)	
2	Khadim Khasim	OBC (CI)	Construction	Opted specialization to be clarified
3	Kawirajagan Bibas Deb	OBC (Gen)	Environmental Engg	
4	Yashwanth Singh	SC	Env	
5	Prakash Anandharwar Singh	SC [GATE]	Structures	Opted specialization to be clarified; A.Tech. Marksheet to be provided
6	Atul Kumar	GEN / NT	Env / WR	
7	Mehangram Sanyal	OBC (NCL)	WR/GIS & RS/Env	Opted OBC (NCL) certificate to be provided
8	Kamal Kumar Singh Ksh	GEN	Env	
9	Jitender Rajwaha	OBC (NCL) [GATE]	WR/GIS & RS	
10	Praveen Choudhary	OBC (NCL)	WR/GIS & RS	
11	Krunal Kumar Naveen Singh	SC	GIS & RS	
12	Shreya Ashim	GEN	WR	
13	Shreya Elangbam	GEN	Transpiration	Opted specialization to be clarified
14	Goldin Gansoni	ST	WR	
15	Bochampi Kashyap	[GATE]	WR	
16	Jayaram Nageswar	OBC (NCL)	WR	
17	Rohinton Kothiyalam	OBC (NCL)	Env / WR/GIS & RS	
18	Langamba Dalam	SC [GATE]	GIS & RS	
19	Lamba Wakhom	GEN	Structures/GIS & RS/Env / WR	Opted specialization to be clarified



**PhD Study Programme at the Department of Civil Engineering NIT Manipur  
(July/Aug 2023)**

**SYLLABUS in Respective Specializations (in Civil Engineering) : Written Test (07/08/2023)**

**Specialization-I WATER RESOURCES ENGINEERING**

**Engineering Fluid Mechanics:** Properties of fluids, Fluid Hydrostatics & Pressure; Buoyancy & Floatation, Continuity equations in 1D and 3D; Laminar and Turbulent flows; Flow in Pipes, Pipe networks; Water Hammer; Dimensional analysis and hydraulic similitude; Pumps & Turbines.

**Hydraulics:** Channel geometry & hydraulic properties, Energy and Momentum equations and their applications; Specific energy, Critical flow, Uniform flow, Gradually varied flow and Water surface profiles, Hydraulic jump; Unsteady flows – Saint Venant's Equations of Continuity and Motion; Flow measurement in channels and pipes;

**Hydrology:** Hydrologic variables, Precipitation & Measurement – Hyetographs, IDF, Evaporation, Evapo-transpiration, Hydrographs – Unit, IUH and S-hydrographs, Hydrograph analysis, Surface run-off & Flood estimation, ; Ground water hydrology - steady state well hydraulics and aquifers; Application of Darcy's Law, Dupuit's principles.

**Irrigation Engg & Hydraulic Structures:** Types of irrigation systems and methods; Crop water requirements - Duty, delta, evapotranspiration; Field Capacity, Lined and Unlined canals, Elements of Diversion Headworks - Gravity Dams and Spillways, Cross-Drainage and Regulation Structures.

**Specialization-II GEOMATICS ENGINEERING (GIS & Remote Sensing):**

**Engineering Statistics-** Surveying measurements, Accuracy, Precision, Most probable value, Errors and their adjustments, Regression analysis, Correlation coefficient, Least square adjustment, Statistical significant value, Chi square test.

**Remote Sensing-** Basic concept, Electromagnetic spectrum, Spectral signature, Resolutions-Spectral. Spatial, Temporal and Radiometric, Platforms and Sensors, Remote Sensing Data Products - PAN, Multispectral, Microwave, Thermal, Hyperspectral, Visual and digital interpretation methods

**GNSS-** Principle used, Components of GNSS, Data collection methods, GPS surveying & DGPS, Errors in observations and corrections.

**GIS-** Introduction, Data Sources, Data Models and Data Structures, Algorithms, DBMS, Databases (spatial and non-spatial), Spatial analysis - Interpolation, Buffer, Overlay, Terrain Modeling and Network analysis.

**Surveying and Mapping**

Maps for engineering projects, Types of Maps, Scales and uses, Plotting accuracy, Coordinate systems- Cartesian and geographical, Map Projections, Datum – MSL, Geoid, Spheroid, WGS-84.

**Land Surveying-** Levelling methods, Compass, Theodolite and Total Station, Trigonometric levelling, Traversing, Triangulation and Contouring .

**Aerial Photogrammetry-** Types of photographs, Flying height and scale, Relief (height) displacement, Stereoscopy, 3-D Model, Height determination using Parallax Bar, Digital Elevation Model (DEM), Slope.

**Image Processing and Analysis**

**Digital Image Processing-** Digital image characteristics: image histogram and scattergram and their significance, Variance-Covariance matrix, Correlation matrix and their significance.

**Radiometric and Geometric Corrections** – Registration and Resampling techniques.

**Image Enhancement** – Contrast Enhancement: Linear and Non-linear methods; Spatial Enhancement: Noise and Spatial filters

**Image Transformation** – Principal Component Analysis (PCA), Discriminant Analysis, Color transformations (RGB - IHS, CMYK), Indices (Ratios, NDVI, NDWI).

**Image Segmentation and Classification** – Simple techniques.



### Specialization-III ENVIRONMENTAL ENGINEERING

#### Water and Waste Water Quality and Treatment:

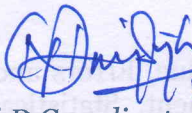
Basics of water quality standards – Physical, chemical and biological parameters; Water quality index; Unit processes and operations; Water requirement; Per capita demand and factors affecting demand Water distribution system; Drinking water treatment. Sewerage system design, Effluent discharge standards; Sludge disposal; Reuse of treated sewage for different applications. Different shapes of cross-section for sewers, Strength of sewage, sampling of sewage, characteristics of sewage- Preliminary treatment, secondary treatment. Sewers – sewer appurtenances- shapes, merits and demerits.

**Air Pollution:** Types of pollutants, their sources and impacts, Air pollution control, air quality standards, Air quality Index and limits; Noise Pollution

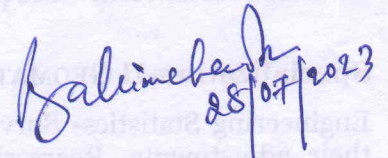
**Municipal Solid Wastes:** Characteristics, generation, collection and transportation of solid wastes.

**Environmental Impact Assessment**

[NB: Those who have opted for other specializations in Civil Engg, other than the above, will have to choose from the above 3 specializations offered as per the institute advertisement ref. No. NITM.3(42-DeanAcademics)/09-PhD/July 2023/354dt. 18/05/2023, if he/she is willing to undertake the entrance test]

  
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PhD Coordinator,  
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Head,  
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