

## WHO WE ARE



Translational research and professional Leadership Centre (TPLC) is an interdisciplinary centre functioning at Government Engineering College Barton Hill, Thiruvananthapuram since 2015 with the introduction of the interdisciplinary M.Tech. program in Translational Engineering. Along with the M.Tech. program, the Centre facilitates internship programs for undergraduate and postgraduate students, offers training programs for students, faculty and professionals in the areas of social relevance as well as leadership, self-awareness etc. The centre takes up consultancy works with the involvement of a dedicated interdisciplinary team and students. The centre has signed MoU with IIT Madras, ANERT, WAPCOS and ULTS. IIT Palakkad and Smart City Thiruvananthapuram Ltd. are about to sign MoU with the centre shortly. The main aim of the centre is to translate the research findings into real-time projects, thereby bridging the gap between academia and practice. The centre strives to mould students into responsible professionals with social commitments.

### Contact us

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 [www.tplc.gecbh.ac.in](http://www.tplc.gecbh.ac.in)

 TPLC, Govt. Engineering College  
Barton Hill, Thiruvananthapuram-35

**Application  
Deadline**

**9th October  
2024**

### Coordinators

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## TRAINING PROGRAM ON

# FLOOD MODELLING & SIMULATION USING HEC-RAS

**14th to 18th October, 2024**



**TPLC**

Organized by

**Translational Research and  
Professional Leadership Centre  
Government Engineering College  
Barton Hill, Thiruvananthapuram**

## About the Program

In this developing era of technological advancement, an engineer should be equipped with modern tools which strengthens the design, planning and operation activities of any project. Addressing climate change is essential, as its impacts ripple through every aspect of our lives. Flooding poses significant risks to communities, infrastructure, and ecosystems. Understanding and managing these risks is crucial for effective urban planning and disaster management. Our training program on "Flood Modelling & Simulation Using HEC-RAS" is designed to equip professionals and students with the essential skills needed to utilize this powerful tool for flood analysis and simulation. This program aims to provide valuable knowledge and practical experience about the applications of GIS & HEC-RAS in specific to flood modelling and simulation.

### What is HEC-RAS?

HEC-RAS (Hydrologic Engineering Center's River Analysis System) is a widely used software application developed by the U.S. Army Corps of Engineers for simulating river and floodplain hydraulics. It allows users to analyze various scenarios, assess flood risks, and design effective flood management strategies. The software supports both one-dimensional (1D) and two-dimensional (2D) modeling, making it versatile for different types of water bodies and flood scenarios.

### Requirements

For hands-on sessions participants need to bring a Laptop

## Training Content

### Day 1: Introduction to GIS and Basic Data Handling

- Overview of Geographic Information Systems (GIS)
- Downloading and handling spatial data
- Introduction to open-source and licensed GIS tools ( ArcGIS)
- Basics of coordinate systems and projections

### Day 2: Georeferencing and Digitization

- Georeferencing satellite images and scanned maps
- Creating vector layers: point, line, and polygon features
- Digitization of boundaries, rivers, and land features

### Day 3: Generating Rainfall Maps

- Working with rainfall data: sources and formats
- Interpolation techniques to create rainfall distribution maps
- Visualizing and analyzing rainfall patterns in GIS

### Day 4: Introduction to HEC-RAS for Flood Modeling

- Basics of hydraulic modeling and flood simulation
- Importing DEMs and other GIS data into HEC-RAS
- Creating a terrain model and setting up cross-sections

### Day 5: Flood Simulation and Analysis

- Running flood simulations in HEC-RAS
- Visualizing flood extents and depths
- Exporting flood maps to GIS for post-processing and reporting

## Who can apply?

Faculty, professionals, students and researchers who are interested to learn about the applications of GIS & HEC-RAS in specific to flood modelling and simulation are cordially invited. Whether you're looking to improve your professional skills or gain insights into flood risk management, this training program offers valuable knowledge and practical experience.

**Registration Fee : ₹3,000/-**  
(Registration fee will not be refunded)

### How to Apply?

**Step 1 : Payment of Fees**

Online payment can be done using any UPI App or Internet Banking to the following bank account.

Account Name: TPLC

Account No: 67314066447

IFSC: SBIN0070415

Bank: SBI Vikas Bhavan

(Proof of payment should be uploaded in the Google form)

**Step 2 : Submit the Google Form**

Google form Link

<https://forms.gle/bENWP9buTLKpp63q6>



Scan to Google Form

**Application Deadline: 9th October 2024**