



**Knowledge Network of  
Indian Institute of Technology, Gandhinagar  
Under TEQIP-II Initiative**

**Summer School on Water Resources  
Engineering**

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Water Resources Engineering (WRE) finds wide engineering applications in Design of Hydraulic Structures (bridge, dam, river training works etc.), drainage design, dam-break flow analysis, flood and drought management etc. The domain of WRE is vast as it involves all aspects of water engineering including open channel flows, surface water and ground water hydrology, sediment transport and flows in pipes. The subject will be taught through problems and projects. This summer school provides an opportunity for the faculty members and students to revise important fundamental concepts in WRE so that their teaching skills are sharpened. Participation in this summer school is invited through registration.

**Topics to be covered**

Open Channel Flows: Fundamental concepts; Uniform flow, Canal design, Steady and unsteady gradually varied flow, Dam break flow.

Hydrology: Hydrologic cycle, Rainfall, Runoff, Flood routing, Ground water flow.

Pipeline: Head losses, Hydraulic transients

**The following format will be followed in the summer school:**

A typical day's activities consist of 2-3 hrs lectures; 2 hrs of problem solving session; 1 hr of laboratory work. In addition, each candidate has to do a project.

Presenters: Instructors:

1. Prof. Pranab Mohapatra (IIT Gandhinagar)
  2. Prof. Vikrant Jain (IIT Gandhinagar)
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