

## **RIVER MANAGEMENT & INTERLINKING OF RIVERS**

### **Course Outcomes:**

At the end of the course, the student will be able to

- Basic concepts of River Morphology and Characteristics of Rivers
- Understanding the basic concepts of models of River Morphology and river gauging
- Knowledge about the various aspects related to flow of water and sediments through natural and artificial channels and design aspects thereof
- Analyze the Reservoir sedimentation and River training works
- Explain about the stabilization, rectification of rivers and design of river training works

### **SYLLABUS**

#### **UNIT I**

River morphology, Plan form variations and river channel pattern, Characteristics of straight, braided and meandering rivers

#### **UNIT II**

River dynamics, River gauging, Analytical models of river morphology

#### **UNIT III:**

Sediment transport in rivers, Bed load and suspended load transport for uniform and non-uniform bed material, Total load equations, sediment sampling, Alluvial streams and hydraulic design

#### **UNIT IV**

Reservoir planning, Reservoir sedimentation, River training works, Soil erosion and sediment yield

#### **UNIT V**

Principles of stabilization and rectification of rivers, River bank stability analysis, Interlinking of rivers issues, challenges and advantages, Design of river training works like groynes, guide banks, gabions, Hydraulic modelling of rivers.

### **REFERENCES**

1. Garde, R.J., (2006), "River Morphology", New Age International Publishers
2. Garde, R.J. and RangaRaju, K.G., (2006), "Mechanics of Sediment Transportation and Alluvial Stream Problems", Wiley Eastern Limited
3. Julien, Pierre, Y., (2002), "River Mechanics", Cambridge University Press  
Jansen, P.P.H., (1994), "Principals of River Engineering", VSSD Publications