

Course Name:

Water Resources Planning and Management (WRPM)

Course Number:

20892

Credit:

3

Course Content (Outline):

- Introduction to WRPM:
 - What is Water Resources Management (WRM)?
 - The main challenges.
 - What is Integrated Water Resources Management (IWRM)? (Why IWRM; IWRM principles).
 - Integration in WRM (Natural and human system interactions, Planning and management scales and sustainability)
- Key IWRM change areas and wise water governance:
 - The enabling environment (Policies, Legislative framework, Financing and incentive structures)
 - Institutional roles (creating an organizational framework, Institutional capacity building)
 - Management Instruments: Water resources and assessment (understanding resources and needs)
 - Plans for IWRM (combining development options, resource use and human interaction) Demand Management (using water more efficiently)
 - Social change instruments (encouraging a water oriented civil society)
 - Conflict resolution (managing disputes, ensuring sharing of water)
 - Regulatory instruments (allocation and water use limits, standards)
 - Economic instruments (using value and prices for efficiency and equity)
 - Information management and exchange (improving knowledge)
- Some IWRM Issues
 - Demand management
 - Water disaster management
 - Interbasin water transfer
 - Climate change
 - Water and sanitation
- Water Resources Planning and Management: An Overview
- Water resource systems modelling: It's role in planning and management
- Modelling methods for evaluating alternatives
- River basin planning models
- Project planning and analysis
- Discussion of journal papers and project discussions

References:

Loucks, Daniel P., and Eelco Van Beek. Water resource systems planning and management: An introduction to methods, models, and applications. Springer, 2017.