



**Course Name:**

Water Resource Systems Analysis II

<b>Course Number:</b> 20-649	<b>Credit:</b> 3
<b>Program:</b> Graduate	<b>Course Type:</b> General Selective
<b>Prerequisite:</b> -	<b>Corequisite:</b> -

**Course Description (Objectives):**

The goal of this course is to understand modeling and analysis of water resource systems under uncertainty. It covers methods such as simulation, probabilistic processes, dynamic programming, and fuzzy set theory for optimization and multi-objective analysis.

**Course Content (outline):**

- Chapter 1: Modelling uncertainty
- Chapter 2: Nonlinear programming: Solution methods
- Chapter 3: Modelling uncertainty: Model sensitivity and uncertainty analysis
- Chapter 4: Multi-objective analysis
- Chapter 5: Water resources systems management under uncertainty- a Fuzzy set approach

**References:**

- “Water Resource Systems Planning and Analysis”, D.P. Loucks, et al., Prentice-Hall, Inc., 1981 (Text Book).
- “Water Resources Systems Planning and Management: An Introduction to Methods, Models and Applications (with contributions from Jery R. Stedinger and Jozef P.M. Dijkma)”, D.P. Loucks & E. van Beek, UNESCO Publishing, 2006 (Text Book).
- “Managing Water Resources: Methods and Tools for a Systems Approach”, S. P. Slobodan, UNESCO Publishing 2009 (Text Book).
- “Handouts and Journal Papers”