Course Name	Code\No.	Number of Credits			
		Theo.	Lab.	Train.	Credit
Urban Hydrology	HWR 351	3	-	-	3
Pre-Requests	HWR 212				

Course Objectives:

The overall goal of this course is to introduce students to the fundamentals of urban water management including water supply, wastewater and storm water.

Course Contents:
1. Introduction to urban hydrology:- Different types of urban systems, its characteristics and management.
2. Domestic water system:- Sources of water, estimation of future demands, treatment of water and water distribution.
3. Sewage water system:- estimation of quantity, collection, treatment and disposal.
4. Storm water system:- estimation of quantity, need for a separate system or with sewage system.

Course outcomes:
- Familiarize students with urban water systems.
- Estimation of the drinking water demands.
- Recognize different types of water treatment according to water quality.
- Standard water quality.
- Estimation of sewer water quantities.
- Collection of sewage water and different types of treatment.
- Reuse of treated sewage water.
- Collection of rainwater within the sewage system.

Evaluation Method:

Students are evaluated through one mid-term exam and one final exam in addition to some assignments and class project.

References:
- **Akan, O.** (2013). Urban hydrology, hydraulics and storm water quality: engineering applications and computer modeling. John Wiley & Sons Inc.
- **Karamouz M., Moridi A. and Nazif S.** (2010) Urban Water Engineering and Management, CRC press.
- **Drinan J**. and Spellman F. (2012) Water and Wastewater Treatment, CRC press.
- **Davis, M. (**2010**)** Water and Wastewater Engineering, McGraw-Hill Education CO.