Course Title: Climate Change and Water			
Course Code: NRC 138	**No. of Credits: 3**	**L-T-P: 32-8-10**	**Learning Hours: 45**
Pre-requisite Course Code and Title (if any):			
Department: Natural and Applied Sciences			
Course Coordinator:		**Course Instructor:** Dr C K Singh	
Contact Details: chander.singh@terisas.ac.in			
Course Type: Elective		**Course Offered In:** Semester 2	

Course Description

Water, apart from supporting life on earth and valuable as a resource, plays a major role in affecting climate. Water cycling has a decisive impact on regional and global climate patterns. Global warming is changing the distribution and intensity of precipitation. With shifts in hydro-meteorological trends (dry regions becoming drier and wet areas wetter), increased variability and increased risk of extreme events in most regions. The importance of water resources will intensify under climate change as more frequent and intense climate extremes will increase variability in precipitation, soil moisture and surface water, eventually influencing water availability, food and energy production. Improved understanding of our water resources is needed to ensure more efficient and judicious allocation to improve access to water and reduce risks from climate change.

This course will focus on managing systemic risk and dealing with uncertainty due to climate change impacts on water resources, including monitoring known risks as well as reducing the unknown risks, through management solutions and policy interventions. The course will also focus on the identification of adaptation measures with emphasis on freshwater resources under climate change and the possible strategies to close the gap between water supply and demand to control and resolve future water resource conflicts.

Course Objectives

- To understand different processes and interplay between the climate system and the global water cycle.
- To understand the climate change influences on water resources and the associated vulnerabilities and risks.
- To understand the concept of Integrated Water Resources Management in relation to climate change
- To understand the necessity for integrated assessment, alternative policy, and innovative management solutions, the framework for water policy guidelines; building resilience; adaptation strategies and interventions needed in sustainable response to changing climate.