

JADAVPUR UNIVERSITY  
COMPUTER AIDED DESIGN CENTRE  
Faculty Council of Engineering and Technology  
Kolkata - 700 032

Certificate course on

Analysis and Simulation of Urban Growth from Remote Sensing Data

Urban growth and sprawl is a pertinent topic for analysis and assessment towards the sustainable development of a city. Environmental impacts of urban growth and extent of urban problems have been growing in complexity and relevance, generating strong imbalances between the city and its hinterland. The need to address this complexity in assessing and monitoring the urban planning and management processes and practices is strongly felt in the recent years.

This course provides a comprehensive discussion on urban growth and sprawl, and how they can be analyzed using remote sensing imageries. Both the theory and practical have been emphasized equally in this course. Scientists and researchers engaged in urban geographic research will be benefited from this course. Post graduate students of urban geography or urban/regional planning may also join this course. This course will also enrich academicians and professionals in related fields.

The CAD Centre is the pioneer institute in the field of Geoinformatics. It maintains a state-of-the-art infrastructure for its courses. The Centre has engaged highly experienced faculty members from academic sector as well as industry. Some of our faculty members are well known figures in the field of Geoinformatics and have published huge number of books, monographs, and research articles internationally.

**Course Duration:** 24 hrs

**Class Duration:** Theory Sessions: 2 hrs each; Practical Sessions: 2 hrs each

**Eligibility:** BE/BTech in Engineering or equivalent; BSc in any discipline; BA/B.Sc. in Geography/Environmental Studies. All should have knowledge of image classification in ERDAS Imagine.

Participants must have mobile devices running Android 4.0.3 or above; laptop/desktop computer with Windows; and stable internet connectivity. Google Meet should be preinstalled the mobile device. ERDAS Imagine should be preinstalled in the laptop/desktop.

**Syllabus:**

Topics	No. of Theory Classes	No. of Practical Classes	Total No. of Classes
Definition of urban, urban growth, urban sprawl, urbanization, process and pattern of urban growth and sprawl	1	-	1
Causes and consequences of urban growth and sprawl	1	-	1
Sustainable development and smart growth	1	-	1
Remote Sensing, GIS and urban analysis; mapping and monitoring of urban growth	1	2	3
Measurement and analysis of urban growth	1	2	3
Modelling and simulation of urban growth	1	2	3
Total	6	6	12

**Certificate:** Completion certificate (in printed form) will be provided at the end of the course.