Unitar Online Catalogue

Geo-information in Disaster Situations

United Nations Satellite Centre UNOSAT

Type:	Course
Location:	Web-based
Date:	8 Mar 2021 to 26 Mar 2021
Duration:	3 Weeks
Programme Area:	Satellite Imagery and Analysis
Website:	https://www.mdma.ku.dk/courses-and-dates/gis/
Price:	$0.00
Event Focal Point Email:	adam.ali@unitar.org
Partnership:	University of Copenhagen

BACKGROUND

The increasing number and intensity of natural disasters in the past few years have had severe consequences in terms of human lives that were impacted, but also in terms of structural damage and economic losses. In years to come, extreme events will no longer be exceptions. Geospatial information technology including satellite imagery analysis and data visualization play a vital role in understanding the geographic extent and severity of catastrophic events. Nevertheless, the ability of national and regionalauthorities as well as disaster management experts to seamlessly collect, integrate, analyze and distribute

geospatial information in a comprehensible format to support evidence-based decision making remains a challenge that needs to be addressed with ad-hoc training and capacity development programs.To meet these challenges, UNOSAT is offering an online introductory course in the use of Geo-Spatial Information Technology applications to support operational planning and decision-makingduring emergency response. The course is designed to accommodate Master students inDisaster Managementand selected participants from line ministries, national/regional authorities, UN and NGOs with little GIS experience.

EVENT OBJECTIVES

The aim of the course “Geo-Information in Disaster Situation” is to prepare the students to be able to effectively utilize geospatial tools and apply GIS methodologies for emergency response mapping. The course will provide a foundation for students interested in GIS-related applications in the field of disaster risk management.

LEARNING OBJECTIVES

At the end of the course participants should be able to:

•Define and describe basic concepts and terminology related to Geospatial Information Technology (GIT);

•Explain the role of geo-information in the response phase of a disaster and identify suitable mechanisms for satellite imagery acquisition;

•Identify, search, collect, organize and analyse geospatial related information relevant for disaster mapping;•Apply basic methods and functionalities of GIS software (ArcGIS) to manage and analyse spatial data;

•Apply basic functionalities of google earth engine(GEE);•Apply basic GIS methodologies to perform impact analysis and preliminary damage assessment in the aftermath of a disaster event.•Undertake the process of map-making in support of emergency response and post-disaster / recovery operations;

CONTENT AND STRUCTURE

The course will develop basic technical GIS skills amongst master level's students and selected participants so that they are able to collect, manage & analyse geospatial data and produce disaster maps using GIS software. During the first week of the training course delivered by the University of Copenhagen, focus will be given to impart basic concept and terminology relative to Geo-spatial Information Technology (GIT), and to learn basic functionalities of ArcGIS software to handle GIS datasets and to perform spatial analysis including the process to produce thematic maps.The second week of thecourse will be delivered by UNITAR-UNOSAT and will be focusing, trough selected case studies(floods, tropical cyclonesetc.), on specific GIT methodologies and applications to perform impact and damage analysis in the immediate aftermath of a disaster event. Mechanisms to collect pre and post disaster satellite images as well as GIS baseline data to produce disaster maps in support of emergency response operations will also be covered during the second week of the GIS course. The use of Google Earth Engine platform will be also performed by the students.During the third week, the participants will be asked to produce their own cartographic products from realcasescenarios providedby UNOSAT.

METHODOLOGY

This is a full-time, online course with live webinars, and GIS lab exercises using local datasets and real case scenarios. This course is divided into several modules. Each module is structured into 4 virtual sessions of 1.5 hours each. The average workload per week is likely to be around 25-30 hours.The course is designed in a way to have a balanced approach between theoretical and practical teaching methods consisting in live webinars, live demos, videos, interactive,GIS virtuallab exercisesand Q&A sessions.At the end of the course,the students will undertake an individual GIS assignment based on a selected disaster event scenario.

TARGETED AUDIENCE

It is recommended that the students taking the course are familiar with basic Microsoft Excel. It could be advantageous for students with prior knowledge on GIS applications, QGIS, AutoCAD or similar software. Participants are highly recommended to attend a 4-hour long course "Getting Started with GIS" Offered by ESRI at:

http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&c... are highly recommended to watch the condensed fast start to earth Engine API related video:
https://www.youtube.com/watch?v=m1ejxSi3l8s&feature=emb_logo

ADDITIONAL INFORMATION

GIS lab exercises will be based on ESRI ArcGIS editor ArcGIS 10.8 with extensions (spatial analyst), Google Earth, Google Earth Engine API platform and internet access.Participants MUST have an internet connection and their own laptop (for the entire duration of the course) that are able to run ArcGIS software. Software will be provided by UNOSAT and installed by the participants on their own computers. Participants should have a google account or create one for the course.