CC311 - GIS for Disaster and Hazard Risk Management Course

Course Duration: 10 Days
Training Fee: KSH 80,000 | USD 800
Course Registration: **Register Here>>**

1.0. Introduction

Geospatial technology is now being used extensively at global scale. These technologies are used for multi-disciplinary applications, monitoring, surveillance, management and mitigation of the problems occurring in the world. They are for example, forest, agriculture, land use planning, environmental management, health situation, and disaster events. Disaster problems are now rising far more frequently and severely, both at global, national, and local levels. This module therefore focuses on an integration of Geospatial technology to provide the information for the management of day-to-day disasters and risks.

1.1. Course Overview

This course will cover disaster risk management cycle; pre-disaster and post-disaster response; the integration of spatial data based on Geospatial technology for planning will also be covered. This module will also examine specifically the role of spatial method play in Disaster Risk Management (DRM). The severe disaster events within the module will be selected for a case study. They include flood, landslide, haze pollution and forest fire, and drought. Disaster risk management of these disasters will be provided for teaching and learning. Mini-project will be assigned by selecting from disaster event on trainee's region and environment.

1.2. Course Objectives

This course will enable the participants to:

i. To understand concepts and application of Geo-technology & disaster risk management.
ii. To be able to explain the integration of various spatial data based on GIS technology in disaster risk management.
iii. To integrate Geo-technology tools e.g. satellite images for disaster risk management.

1.3. Course Content/Outline

i. **Introduction to Disaster Risk Management:** Identification & description of types of disasters; Describe the basic principles, concepts and process of DRM.
ii. **Geospatial Technology for Disaster Risk Management:** Types & sources of spatial data; the role & benefits of GIS technology in disaster risk management.
iii. **Disaster Risk Map:** Understand concepts of creating disaster risk map; explain data and methods employed to create a disaster risk map by using GIS.
iv. **Early Warning System:** Insights on the procedures to early warning disaster risk; Designing early warning ring system.

v. **Disaster Risk Model:** Understand procedures for disaster risk model; explain data and methods employed to create the model for various disaster risks.
vi. **Emergency Operation:** Typical disaster response activities that can be used geoinformation technology; data and methods used to operate the emergency event.
vii. **Hazard, Vulnerability and Risk assessment:** Use of GIS in disaster preparedness planning; GIS Multi criteria analysis in vulnerability assessment.
viii. **Recovery:** Activities of disaster recovery that can be used geoinformation technology; explain data and methods used to perform recovery after the disaster event.

1.4. Case Studies

i. **A Case Study 1 - Flood Risk Management:** Understand the basic concepts of flood and flooding; Managing flood risk by using GIS technology.
ii. **A Case Study 2 - Landslide Risk Management:** Have an understanding of basic concepts of landslides; Managing landslide risk by employing the GIS technology.

1.5. Expected Learning Outcomes

On completion of this course, the participants are expected to:

i. Apply the geo-information and earth observation techniques in support of sound and effective disasters, hazards and management in a given locality.
ii. Acquire knowledge and skills needed for the collection, interpretation, and management of spatial information, using remote sensing and geographic information systems, to support planning and decision-making processes in disaster risk management.
iii. Acquire skills using Geospatial tools that help in creating a disaster risk map.
iv. Obtain the insights on Modern day geo-technologies e.g. GIS for disaster risk Management thus helps to understand effects of disaster on environment from inter-disciplinary aspect.
v. Get acquainted with GIS and other geo-techniques to provide project specific solutions in the field of disaster, hazard and risk management realm.

1.6. Training Tools (Hardware and Software)

1. Android Smartphone;
2. A Laptop or PC;
3. Satellite images;
4. ENVI Software;
5. ArcGIS & Q-GIS;

1.7. Training Style and Approach

- On-site instructor-led training;
- On-line self-paced training (optional);
- Use of PowerPoint Slides;
- Fieldwork Exercises;
- Use of Case Study Videos.