# GIS AND REMOTE SENSING APPLICATIONS FOR FLOOD HAZARD MAPPING

5 DAY SUMMER SCHOOL PROGRAM

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## Educational Concern

Floods affect an estimated 520 million people across the world yearly, resulting in up to 25, 000 deaths in a single year. The number of reported flood events has been increasing significantly -- particularly in the last 20 years -- this is attributed to climate change and modification of natural landscapes. Flood monitoring is therefore critical in disaster management to reduce risks and vulnerability. Satellite images and GIS technologies have been used in providing accurate flood risks maps for flood hazard management .

## Target Group

The course is designed for professionals working in government organizations, research institutions and universities. Professionals engaged in flood modelling, forecasting and management will find this course useful. This course will be also useful for professionals working in flood risk assessment, risk management and development planning.

## Course Contents

- Review of hydrological and hydraulic concepts
- Flood Modelling Basics
- Flood Modelling in Practice
- Flood Risk Mapping and Risk Assessment

## Learning Environment

- Learn experts sourced form DHI and NDMP
- Hands on experience in modeling
- Using MIKE and GIS for flood mapping
- Cognitivism, constructivism and PBL

## Learning Outcome

- Acquire basic knowledge on GIS, Remote Sensing and flood modelling
- Analyse and Identify return periods of flood events
- Apply Flood modelling, Remote sensing and GIS for flood mapping
- Develop flood hazard maps as tool for decision making and planning
- Infer and recommend best flood management options

## References


- Alfieri, L., Salamon, P., Bianchi, A., Neal, J., Bates, P., & Feyen, L. (2014). Advances in pan-European flood hazard mapping. *Hydrological processes*, *28*(13), 4067-4077.
- Bapalu, G. V., & Sinha, R. (2005). GIS in flood hazard mapping: A case study of Kosi River Basin, India. *GIS Development Weekly*, *1*(13), 1-3.


DAAD Deutscher Akademischer Austausch Dienst German Academic Exchange Service

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