AMRITA VISHWA VIDYAPEETHAM

Center for Wireless Networks & Applications

MTech in GEOINFORMATICS & EARTH OBSERVATION

The Program

Hands On
Strong focus on hands-on experience based on sound theoretical knowledge

Faculty
Dedicated and accomplished faculty with international training and experience

Research
Opportunity to take part in various research projects directly impacting rural society

International
lectures & projects involving international collaborators, visiting researchers and experts

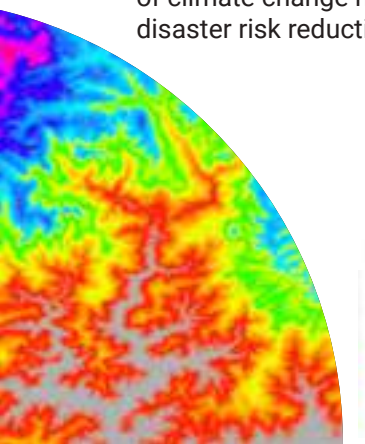
Scope of The Program

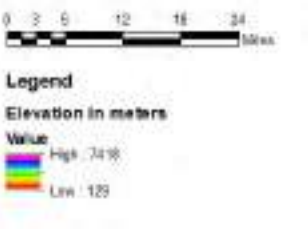
The MTech program prepares students for employment in the public and private sectors, both nationally and internationally. The career opportunities are in the fields of GIS and Remote Sensing, big data analytics and machine learning, climate change adaptation and mitigation, Smart City planning, urban and rural planning, disaster management, etc.

About the Program

M. Tech. in Geoinformatics and Earth Observation is a program offered at School of Engineering, Amrita Vishwa Vidyapeetham, Amritapuri campus. Evolution of Smart City and Smart Community based research, to achieve the United Nations Sustainable Development Goals, has increased the demand for spatial assessment and earth system observations. These needs are further enhanced due to climate change impacts. Domain knowledge about the monitoring phenomenon plays a key role in designing systems that minimize the impact of natural hazard and reducing disaster risk.

To achieve this we developed a multidisciplinary curriculum that introduces a wide spectrum of geospatial data analysis for multi-hazard risk assessment and disaster risk reduction. This program aims to provide the students with an opportunity to acquire detailed systematic knowledge and critical understanding of spatial environment related processes. The students will learn to become a valuable part in the national and global efforts of climate change mitigation and adaptation, disaster risk reduction, Smart City planning etc.





Program Curriculum

- Geoinformatics
- Earth observation
- Data Analytics & Modelling
- Applications

- Environmental Impact Assessment
- Python for Spatial Analysis
- Geostatistics
- Time Series Analysis
- Machine Learning
- IoT Systems
- Geo-Projects
- Live-In-Labs
- Remote Sensing of Earth Systems
- Introduction to Earth System
- Advanced GIS and Remotesensing
- Geodetic, Geophysical and Geotechnical Sensors
- Geospatial Modelling
- Digital Signal Processing

Tools Used

The program introduces state of the art technologies for data collection and analysis, as well as the ability to independently develop innovative solutions to complex problems in the area of the environment.

Major tools include

ArcGIS Pro	Web GIS
ENVI	QGIS
Matlab	Python

What is Geoinformatics?

Geoinformatics is a study area that brings together geosciences and digital as well as information technologies to arrive at a comprehensive picture of geo-spatial information. It involves the acquisition and storing of geospatial data along with arriving at spatial information to be utilised for societal benefit. Earth observations from the various remote sensing and in-situ sensors help us in understanding the Earth System components namely weather, climate, oceans, land, geology through the various tools of geoinformatics.

Evolution of Smart City and Smart Community based research have increased the demand for spatial assessment and earth system observations. These needs are further enhanced due to climate change impacts. Geoinformatics is an interdisciplinary field which finds application in a wide variety of areas like rural and urban development, management of natural resources, disaster management, tourism and various location-based businesses and services.

Partners and collaborators

The program has benefited immensely from the government, industry and academic collaborations of Amrita Vishwa Vidyapeetham. The university has an active MOU with the leading GIS industry, ESRI, India. Active collaborations also exist with India Meteorological department (IMD), Indian National Center for Ocean Information Service (INCOIS), Geological Survey of India. Furthermore, MOUs and collaborations exist with several overseas world class universities and research centers such as Lawrence Berkeley National Laboratory (LBNL), University of California;

nirf National Institutional Ranking Framework
Government of India, 2020

THE WORLD UNIVERSITY RANKINGS
No.1 Private University in India (2020)

QS WORLD UNIVERSITY RANKINGS
No.1 International Faculty (2020)

THE WORLD UNIVERSITY RANKINGS
No.1 International Outlook (2020)

THE WORLD UNIVERSITY RANKINGS
Top300 Clinical, Pre-clinical & Health (2020)

THE WORLD UNIVERSITY RANKINGS
Top400 Engineering & Technology (2020)

Rankings & Accreditation

Amrita Vishwa Vidyapeetham emerged as the 4th best university in the country in the National Institutional Ranking Framework (NIRF) Ranking 2020. In THE World University Rankings 2020, Amrita is ranked as No.1 Private institution in India. We are ranked in the Top 300 in the world for Medicine and Top 500 in Engineering by Times Higher Education. In THE University Impact Rankings, a pioneering initiative to recognize universities around the world for their social and economic impact, Amrita has been ranked among the Top 300 in the world.

INSTITUTION of EMINENCE

THE ASIA UNIVERSITY RANKINGS
125 Rank in Asia (2020)

Learning Outcome

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Earth Observation

Learn the principles and applications of Earth observation techniques

Practical Applications

Utilise the Geographic Information System (GIS) in practical applications of societal benefit

Understanding Earth

Gain understanding in the basics of weather, climate and geology of the Earth System

Disaster Mitigation

Acquire skill in modelling of the various aspects of environmental condition and disaster mitigation

Usable Innovations

Become competent in planning and executing a project which will lead to usable innovations

Research Project

Effectively communicate the results of the research project in a succinct manner

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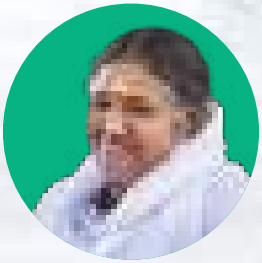
Who Can Apply?

Since the program has a strong multidisciplinary nature, students with Engineering as well as Science background are eligible for admission. Applicants should have any of the following, scoring a minimum of 60% with a pass :

- Bachelor's degree in Engineering / Technology (including the final year students awaiting the results)
- Master's degree in any branch of Science / Mathematics / Statistics / Computer Applications
- Professional Society Examinations recognised by MHRD / UPSC / AICTE equivalent to B.E. / B.Tech / B. Arch.



There are two types of education: education for a living and education for life. When we study in college, striving to become a doctor, a lawyer, or an engineer, that is education for a living. But education for life requires an understanding of the essential principles of spirituality; it is about gaining a deeper understanding of the world, our minds, our emotions, and ourselves.

- Sri. Mata Amritanandamayi Devi
Chancellor, Amrita Vishwa Vidyapeetham

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