

**STEP-HBTI, KANPUR,
(Society Established by Govt. of India)
Six Months CERTIFICATE COURSES**

On

“Remote Sensing, GIS Techniques & its Applications”



Steps towards Corporate Excellence...

STEP-HBTI, HBTI CAMPUS, NAWABGANJ, KANPUR-208002

ABOUT INSTITUTE

Science & Technology Entrepreneurs' Park (STEP) is a project sponsored and managed by HBTI, Kanpur along with Department of Science & Technology, Govt, of India, New Delhi. It is also financed by various financial institutions like IDBI, IFCI and ICICI along with active funding from the Govt, of Uttar Pradesh, through its Department of Science & Technology and Department of Industries. It was established in the year 1986 at HBTI, Kanpur for motivating Science, Technology and Engineering Graduates for taking up entrepreneurship as a career. STEP-HBTI campus is located in the premises of HBTI, the prominent engineering institute in the world. STEP-HBTI has been engaged in the activities of Technology development, Technology up gradation, Technology incubation, Technology transfer and Technology applications in Industries. Being in the vicinity of HBTI all the resources are used STEP-HBTI. It has also been engaged in motivating the employees of different industries to adopt new measures for improvement in efficiency and productivity management. STEP- HBTI for the last 24 years has been working as an apex organization for transforming technical education into entrepreneurship. It has successfully transformed a number of engineers and technologists into entrepreneurs.

The management programme leading to an MBA degree at STEP-HBTI is being carried on since last 7 years. Lately, seeing a huge demand for well oriented and qualified professionals worldwide, the Institute has increased its MBA seats from 60 to 120 in the year 2010 & started PGDM programme in 2011, where it offers a wide spectrum of courses which are tailor-made to meet the industry requirements. It has got all infrastructure and facilities to impart proper training in all disciplines of specialized management including information technology, which is the need of hour. A lush green campus, well stocked Library, Computer lab, Cafeteria and above all an environment for learning, makes the campus life more vibrant.

Six Months Certificate course on “Remote Sensing, GIS Techniques & its Applications”

Course Objectives:

Remote Sensing and Geoinformation Science have become key technology tools for the collection, storage and analysis of spatially referenced data for resource planning and decision making. Today it is the backbone to many decision-making systems and location-based services emerging in the New Information Economy. The courses are designed to introduce the student to the rapidly expanding fields of R.S & GIS techniques. The course emphasizes the potential of data capture to a GIS from remotely sensed images that may be used as an interdisciplinary approach to spatial decision-making and problem solving. Planners and decision makers' that utilise these Geo-spatial technologies for variety of applications in forestry, mining, water resources, environmental analysis as well as the infrastructure.

This course consists of both a lectures and ‘hands on’ laboratory sessions each week.

Learning Outcome:

On successful completion of this course the students will

- Be able to manage, manipulate and analyse relevant data using GIS technology.
- Be able to recommend the optimum Remote Sensing technique and programme of processing for a particular problem.
- Be aware of the hardware and software requirements for the R.S. & GIS lab.

Admission requirements:

Six months Certificate Course:-

- Minimum Qualification: - Diploma, Graduate & Postgraduate in any discipline from a recognized University.
- Basic Computer knowledge is essential.

Course Fee: - Rs.30, 000/- per student

Number of Seats: 30

Course Duration: 150 hrs. (Theory and Practical)

Application Software:

The main software system used in the laboratory will be: ARCGIS 10.4, ARCGIS PRO.

Library:

STEP-HBTI Library is a specialized scientific library on R.S & GIS. The library is open to all students and staffs & supports the education and research.

Syllabus**Module 1 Fundamentals of Remote Sensing**

Process of remote sensing; characteristics, measurement and interaction of EMR with earth surface, image, pixel and swath. Remote sensing satellite, orbits, sensors and resolution. Image restoration and image enhancement. Elements of image classification, visual interpretation.

Module 2 Fundamentals of Photogrammetry

Introduction to aerial photography; purpose of photography, scale of photography, types of aerial photography, time and season of photography. Basic geometric characteristics of aerial photographs; types of aerial

photographs, scale, groundcoverage and resolution of aerial photos, tilt and relief displacement.

Module 3 Digital Image Processing

Introduction to Digital Image Processing, Image Pre-processing, Image Enhancement, Image Classification, Image Fusion and Change Detection, Image Texture and Segmentation, Hyperspectral Image Analysis & LiDAR Data Processing.

Module 4 Introduction to Geographical Information System

Introduction to Global Positioning System (GPS) and its application, basic concepts of Geographical Information System (GIS), geographic database structure, data inputting in GIS, spatial data analysis (raster and vector data). Application of remote sensing and GIS technology in environmental studies.

Module 5 Application of RS/GIS

Case studies of various completed projects pertaining to current issues in which remote sensing and GIS technologies have been used.

1. Application of Geographic Information System in Geology, Geotechnical Engineering and Engineering Geology
2. Application of Geographic Information System in Geographic, human settlement, Land use Studies and Archaeology
3. Application of Geographic Information System in Environmental Studies and Natural Resource Management
4. Application of Geographic Information System in Surface and sub-surface Water Resources, Oceanic Studies, Fishery and Meteorology
5. Nutrition and Health of Women
6. Application of Geographic Information System in Ecology, Agriculture and Forestry

Topics for Practical exercises

1. Study of topographic maps.
2. Study of multispectral images
3. Visual interpretation of satellite images
4. Image enhancement
5. Supervised classification of satellite images
6. Unsupervised classification of images
7. Demonstration and use of GPS
8. Demonstration on GIS software and study of data input devices
9. Demonstration of raster/vector analysis of GIS data

Module 6:

Pilot Project: Pilot Project, Report Writing and Defence.

APPLICATION FORM FOR SIX MONTHSON REMOTE SENSING, GIS AND IT'S APPLICATIONS– 2016

1. Name of the Candidate : _____
(in full & Capitals)

Affix recent
Passport size
Photograph

2. a) Mother's Name : _____

b) Father's/Husband Name : _____

3. Date of Birth (In Christian Era) :

Date	Month	Year
<input type="text"/>	<input type="text"/>	<input type="text"/>

4. Gender :

Male	Female
------	--------

5. Marital Status :

Single	Married
--------	---------

6. Nationality : _____

7.. Address for communication : _____
(Give complete address in Capitals & e-mail address clearly) _____

_____ Pin Code _____

Tel. No. _____ Fax No _____

Mobile No _____

8. Educational Qualifications (Starting from 10th onwards)

Sl. No.	Examination Passed	Branch/ Subject	Year of Passing	College/Board University	% of Marks

Note: In case of CGPA please indicate equivalent percentage of marks.

9. Experience after Graduation (if any)

Sl. No.	Designation	Name of Organization	Period		Nature of duties
			From	To	

DECLARATION

The above furnished information is true to the best of my knowledge and in case of anything found misleading or wrong my candidature is liable to be rejected without any notice.

Place:

Date:

Signature of Candidate

(Name in Full)

Filled-in Application may be sent to:

*Science Technology Entrepreneurs Park
A Government of India Society (Sponsored by Department of Science
& Technology, Govt. of India) Harcourt Butler Technological Institute*

*H.B.T.I. Campus, Nawabganj
Kanpur - 208002 -(UP)*

Phone No. : 0512-2562536

*Website : www.stephbt.ac.in
E-Mail : stephbt@gmail.com
info@stephbt.ac.in*