PROSPECTUS Certificate & Diploma Course in Geoinformatics Last Date of Online Application; 25-05-2024

There is no application fee

Admission Open

COOCH BEHAR COLLEGE DEPARTMENT OF GEOINFORMATICS

UGC-NSQF (University Grants Commission-National Skills Qualification Framework) Courses in Geoinformatics

Affiliated to

Cooch Behar Panchanan Barma University



There is no application fee





ADMISSION SCHEDULE

Commencement of Online Application:

20.05.2024

Last Date of Online Application:

25.05.2024

Publication of Final Merit List:

26.05.2024

E-counselling / Admission :

Starts from 27-05-2024

Class : Starts from 29-05-2024



There is no application fee

MESSAGE FROM THE DEPARTMENT

The Department of Geoinformatics, Cooch Behar College has established under the National Skills Oualification Framework. Grants University Commission (NSQF) and affiliated to Cooch Behar Panchanan Barma University in the year of 2020. Geoinformatics is the science and the technology which develops and uses information science infrastructure to the problems of geography, address cartography, geosciences, engineering and other branches of science. It is a term used to describe geospatial technologies that ranges of modern tools contributing to the geographic mapping and analysis of natural features on the earth and human made features. The fields and sectors deploying these technologies are currently growing at a rapid pace, informing decision makers on the topics such as soil & agriculture, irrigation & water resource management, urban & regional planning, accident analysis & hot spot analysis, telecom & network services, transportation planning, environmental impact analysis, determining land use/land cover changes, navigation, flood damage estimation. natural resources management, land information system, surveying, detection of coal mine & other minerals, tourism information system, pest control and management, site suitability for waste treatment plant, geologic mapping, locating underground pipes and cables, wildlife management, snow cover mapping, runoff prediction and much more applications. As disasters are spatial in nature, the Geoinformatics act as a decision support tool consisting geospatial techniques and skills of GIS (Geographic Information System), RS (Remote Sensing) & GNSS (Global Navigation Satellite System). So Geoinformatics is useful in disaster management applications & for decision making also. The Certificate & Diploma courses in Geoinformatics

will enhance the skill of the students in this particular techniques which will definitely enable them to use it in their academic study, research and find job as well.









GEOINFORMATICS

Geoinformatics potentially applicable to academic activities, research, business, administration and governance. it includes the following tools and techniques:

Remote Sensing: It is a techniques of taking Imagery and data collected from space or airborne camera and sensor platforms. Some commercial satellite image providers now offer images showing details of one-meter or smaller, making these images appropriate for monitoring humanitarian needs.

Geographic Information Systems (GIS): A suite of software tools for mapping and analyzing data which is georeferenced (assigned a specific location on the surface of the Earth, otherwise known as geospatial data). GIS can be used to detect geographic patterns in any type of spatial and non-spatial data in a same platform.

Global Navigation Satellite System (GNSS): It is nothing but the Positioning System on the earth. Global Positioning System is a network of U.S. Department of Defense satellites which can give precise coordinate locations to civilian and military users with proper receiving equipment. India has also developed her own system in this field.

Internet Mapping Technologies: Software programs like Google Earth and web features like Microsoft Virtual Earth are changing the way geospatial data is viewed and shared.

OUR VISION

JOB OPPOTUNITY

With the implementation of Spatial Data Infrastructure at National level (NSDI) and State level (SSDI) with District level (DSDI) and Block level (BSDI), there is a growing need to have trained manpower to deal with the GIS and spatial data assimilation and collection. analysis. Besides it many Industries, government and private organizations are recruiting persons with knowledge in Geoinformatics in urban fields like various planning, watershed management, forestry, water resource management. Geoinformatics & Remote Sensing Cell, Department of Higher Education, Science and Technology and Biotechnology, Government of West Bengal as well as all other state governments and central government implement number of projects on RS & Certificate or Diploma GIS. in Geoinformatics is a desirable qualification for recruitment of project scientists for these projects however essential qualifications may vary from project to project. The private companies in our country have also created ample job opportunities for the students who are expertise with skill based education of Geoinformatics. In education sector this expertise plays a great role for implementing their research objectives in science as well as social sciences.

Our vision he is to recoanized the as most innovative **Geoinformatics** trainina centre in our district as well as in West Bengal & to enhance the R.S & GIS skills of the students so that they can get job in different industrial company their skill in and use academic and research oriented work

OUR MISSION

The institution aims to promote higher education in skill sector, creating dynamic through the environment implementation of updated *technology* delivering educational opportunities in collaboration with private. semi-public public, and organizations, and create a balanced program of real human resource development in field of Geoinformatics.

WHY ARE WE THE BEST CHOICE FOR YOU?

- Well equipped Remote Sensing & GIS Lab. (Computer Student Ratio- 1: 1) connected with high speed internet by LAN.
- Availability of both open sourced and Trade Software (ERDAS IMAGINE, Geomedia & ARC GIS).
- □ Providing study materials and e-contents.
- Weekly academic staff meeting & Monthly teachers-students academic meeting
- Departmental and central library facilities.
- ICT based teaching & learning process (smart board, visualizer, PowerPoint lecture, online course).
- Surprise test, class test and internal assessment, innovative teaching learning methods are followed for effective curriculum delivery.
- **Providing question bank.**
- □ Students' class presentation with PowerPoint.
- □ Marks awarded for class attendance.
- Group discussion of students.
- **D** Publication of Magazine.
- **Teacher** Guardian meeting.



OUR COLLEGE CAMPUS

COOCH BEHAR COLLEGE



MESSAGE FROM PRINCIPAL



The introduction of Geoinformatics Courses in our college is an opportunity to develop the skill of students in the field of RS & GIS for availing the job opportunity flourishing their and excellency in academic activity and research work. This Course, a New & Original in the field of Higher Education, is approved by the UGC & affiliated to Cooch Behar Panchanan University. The future generations of Cooch Behar & surrounding areas, in particular and the Society, in general will be benefited.

Teaching Faculties



DR. TAPAN KUMAR DAS

Dr. Tapan Kumar Das is an Assistant Professor of Cooch Behar College who did his M.Sc. from University in Calcutta in 1997 and has been awarded Ph. D. degree from Vidyasagar University in 2012. He had undergone NNRMS Certificate Course in RS & GIS from IIRS, Dehradun and completed his P. G. Diploma in Geoinformatics from ITT-Council, Delhi. He has been also serving as Coordinator of IIRS Outreach Programme of Cooch Behar College Centre.



MR. DIPANKAR SAHA

Mr. Dipankar Saha has been graduated in Geography from University of North Bengal in 2016 and done Post Graduation in Geography from Raiganj University in 2018. Qualified West Bengal SET in the year of 2018. He has completed his both Certificate Course in Remote sensing and GIS & NNRMS Course from IIRS, Dehradun and from NIT Agartala in the year of 2020. He obtained his P. G. Diploma in Geoinformatics from ITT-Council, Delhi.



MR.ABHIJIT SEN

Mr. Abhijit Sen has been graduated in Geography from Calcutta University in 2014 and Post Graduated in Geography from Rabindra Bharati University in 2017 and done his PG Diploma course in RS & GIS from Jadavpur University in 2018. Qualified UGC NET in the year of 2017.

Non-Teaching Staff



ASISH BHOWMICK Office Assistant



SUDIP DAS Group-D





Mr. Soumya Bhattacharyya Senior Photogrammetry Analyst Sky Map Global (India) Private Limited



Mr. Prasenjit Pal Senior Geospatial Analyst Sky Map Global (India) Private Limited

Mr. Anuj Mittal Senior Executive (Drone) Sky Map Global (India) Private Limited



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Eligibility Criteria for Admission in Certificate Course:

A Candidate shall be eligible for admission if he/she has passed (10+2) 12th class or equivalent level in any discipline recognized by the Board. Preference will be given to the candidates who have passed 10+2 course Geography with Physics / Chemistry / Mathematics / Statistics / **Biological Sciences** Computer Science Geology / Economics

Eligibility Criteria Admission in D Course:

Criteria for n Diploma

A Candidate shall be eligible for admission if he/she has passed (10+2) 12th class or equivalent level in anv discipline recognized by the Board and/or candidates those who have successfully completed 6 months certificate course in Geoinformatics in Semester System under UGC-NSQF Regulation may be permitted lateral entry directly in the second semester of Diploma Course. Preference will be given to the candidates who have passed 10+2 course with Geography / Physics / Chemistry / Mathematics / Statistics / Biological Sciences / Computer Science / Geology / Economic

TOTAL SEAT

Total Number of Seats is 37 in each courses, both Certificate & Diploma. The admission will be made on the basis of merit list.

Course Tenures & Fees

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Certificate Course in Geoinformatics- It is 6 months course equivalent to any certificate course in Remote Sensing & Geographic Information System as well as certificate course in Information and Communication Technologies. This is a part-time class programme. A student perusing any regular course (UG/PG) shall be allowed to proceed for Certificate Course of Geoinformatics side by side. The course fees is 6000/- (Rupees six thousand) only. The university registration fees, examination fees & excursion fees are to be paid additionally.

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Diploma Course in Geoinformatics - It is 1 year (2 Semesters) course equivalent to any Diploma Course in Remote Sensing & Geographic Information System as well as Diploma Course in Information and Communication Technologies. The first semester of diploma Course is synchronized with the Certificate Course. The total course fees of Diploma Course is 12000/- (Rupees twelve thousand) only to be paid in 2 instalments (6000/- in each Semesters). Migration Certificate will be required for the external candidates after admission in Diploma Course. The university registration fees, examination fees & excursion fees are to be paid additionally.

Sky Map Global India Pvt. limited

The Cooch Behar College has signed a Memorandum of Understanding with Sky Map Global India Pvt. Limited for enriching the skill of the students providing hands on training by Trade Experts and offering job for the aspiring students.

The College will sign MoU with more leading companies very soon.



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MEMORUNDUM OF UNDERSTANDING (MOU) & ADMISSION SCHEDULE

OUR SUCCESSFUL ACHIEVERS



Mafijul Islam Diploma Student(2020-2021) Designation: Junior Research Fellow in GIS Project work: Digital India land record modernization project. Parntik Care The Earth Geo info solutions Pvt, Prantik, Bolpur



Rajyasri Adhikari Certificate Course Student (2021) Designation: Junior Research Fellow ICAR-Central Research Institute for Jute and Allied Fibres (ICAR-CRIJAF), Kolkata



COOCH BEHAR PANCHANAN BARMA UNIVERSITY

Certificate & Diploma Course in Geoinformatics Under National Skills Qualification Framework, University Grants Commission

Credit Framework and Marks Distribution

Certificate Course in Geoinformatics: 6 months (1st semester only), 30 credits, 400 marks Diploma Course in Geoinformatics: 12 months (1st & 2nd Semester), 60 credits, 800 marks

Semester	Papers	Name of the Paper	Marks & Credits	General Education Component (GEC)	Skill Development Component (SDC)	Attendance & Comprehensiv e Evaluation (CE)	Total Marks / Credits
	Paper-I	Basics of	Marks	30	60	6+4	100
1 st Semes		Computer Application	Credits	2	5	1	8
ter	Paper-II	Basics of Remote	Marks	30	60	6+4	100
		Sensing & Drone Technology	Credits	2	5	1	8
	Paper-III	Basics of Geographic Information System Project Work & Seminar	Marks	30	60	6+4	100
			Credits	2	5	1	8
	Paper-IV		Marks		70 (Project Work) + 30 (Presentation & Viva-voce)		
			Credits	6 (SDC)			6
1 st SEMSTER TOTAL			Marks	90	280	18+12	400
			Credits	6	21	3	30
2^{nd}	Paper-V	Advanced Remote	Marks	30	60	6+4	100
Seme		Sensing	Credits	2	5	1	8
ster	Paper-VI	Advanced Geographic Information System	Marks	30	60	6+4	100
			Credits	2	5	1	8
	Paper-VII	Global Navigation Satellite System & Advanced Drone Technology Dissertation & Seminar	Marks	30	60	6+4	100
			Credits	2	5	1	8
	Paper-VIII		Marks	70 (Dissertation) + 30 (Presentation & Viva-voce)			100
			Credits	6 (SDC)			6
	1		Marks	90	280	30	400
2 nd SEMSTER TOTAL			Credits	6	21	3	30

Syllabus of Certificate Course & 1st Semester of Diploma Course

Paper								
Рарег	GENERAL EDUCATION COMPONENT							
Basics of Computer	Computer Applications:							
Application	1. Definition of Computer							
PAPER- I	 Basic Operations of Computer Input, Output & Storage unit (Primary, Secondary) 							
	4. Central Processing unit							
	5. Computer Memory (RAM, ROM & Secondary)							
	6. Number system, Computer Network (LAN, WAN)							
	7. Computer software & Shortcut Keys 8. Advantages of Computer							
	SKILL DEVELOPMENT COMPONENT							
	Words, Excel & PPT:							
	1. Introduction to Word Processor							
	 Page setup, font, font style, colour Header & footer, footnote 							
	4. Inserting picture, wrapping textbox							
	5. Hyperlink							
	6. Table							
	1. Introduction to Spread Sheet							
	 Page setup, inserting rows/columns, worksheet, chart, function 							
	3. Formatting cell, color and calculation using functions							
	 Slide Show Creating Slide Show by using Animation Technique 							
	3. Clip Art							
	4. Picture Editing							
Basics of Remote	GENERAL EDUCATION COMPONENT							
Sensing	Basics of Remote sensing: 1. Definition on remote sensing							
PAPER -II	2. Brief history of remote sensing							
	3. Electromagnetic Radiation (EMR)							
	 Process Remote sensing Interaction of EMR with atmosphere (Types of Atmospheric Scattering, Reflection, Absorption), Energy Transmission 							
	Interaction of Link with atmosphere (types of Atmosphere Scattering, Refection, Absorption), Energy Harshission 1. Remote sensing platforms and sensors							
	2. Passive & active remote sensing							
	3. Arial Photographs: Types, scale. resolutions & geometric properties							
	4. Satellite orbits, types of scanner, swath.							
	1. Satellite Images, Concept of Different Bands							
	2. Resolution of Images (Spatial, Spectral, Radiometric and Temporal)							
	3. Remote Sensing Data: Digital Image Data Format (BSQ, BIL, BIP)							
	SKILL DEVELOPMENT COMPONENT Remote Sensing using Standard Open Source Software:							
	1. Identification of Physical & Cultural features and thematic mapping using Arial photograph							
	2. Pre-processing of Images: Layer Stacking, Mosaicking & Sub-setting, Clipping Area of Interest (AOI).							
	3. Digital Image processing: Data Acquisition/Restoration, Image enhancement							
	 Band Compositions: True Colour composite (TCC), False Colour composite (FCC) Connect, share & Process EO (Earth Observatory) data using cloud enabled Web Platform 							
Basics of	GENERAL EDUCATION COMPONENT							
Geographic	Overview of Geographic Information System:							
Information	1. Definition of GIS							
Systems	 Brief history of GIS Components of GIS 							
PAPER –III	4. Functions and advantages of GIS							
	5. Applications of GIS							
	SKILL DEVELOPMENT COMPONENT							
	GIS using standard Open source Software : 1. Interface & Plugins concepts							
	2. Raster handling/processing							
	3. Geo-referencing (Image to Image), (Ground to Image), (Google earth to Image)							
	4. Projection Transformation							
	 Digitization: Point, Line, & Polygon, Labeling & Symbology Length & Area Calculation 							
	Image: Second Area extended 1. Working with vector layers, vector editing, data attribution, import CSV file							
	2. Join external file with vector layer							
	3. Attribute & spatial query.							
	 Preparation of LULC Map by on screen digitization Lay out/Map Composition 							
Project Work								
PAPER- IV								
	Project Work & Seminar (Skill Development Component)							

Syllabus of 2nd Semester of Diploma Course

Paper Topic Advanced 1. Law of Radiation (Planck Sur, Weik's Law, Stein Baleman's Law), Back Bady Radiation. Ansmotel 2. Second Paletacians Curves (weikry regation), soil of Lab Second Paletacians Curves (weikry regation), soil of Lab Second Paletacians Curves (weikry regation), soil of Lab Second Paletacians Curves (weikry regation), soil of Lab Second Paletacians Curves (weikry regation), soil of Lab Bandard - Socond Paletacians Curves (weikry regation), soil of Lab Paletacians - Applications of Hemote Sensing Casil, Industry Standard Image Processing Software); PAREEV - Reflected Casilization Socond Paletacians Curves (weikry Standard Image Processing Software); - Unsupervised Casilization Advanced - Band Habridon, (PUNI, NOV, NOS), NOS 450; Band Habridon (PUNI, NOV, NOS), NOS 450; - Maleuracian Reclamination of Socian Casilization Advanced - Band Habridon, PUNI, NOV, NOS, NOS 450; Advanced - Casilization (PUNI, NOV, NOS), NOS 450; Advanced - Casilization (Puni, NOS, NOS 450; - Advanced - Casilization (Puni, NOS 450; Socian); - Ottom (MS 60, Socian); - Ottom (MS 60, Socian); - Ottom (MS 60, Socian); - Ottom (MS 60, Socian); <th>Advanced Remote Sensing (Industry Standard Image Processing Software) PAPER- V</th> <th>GENERAL EDUCATION COMPONENT 1. Law of Radiation (Plank's law, Wein's law, Stefen Bolzmann's law), Black Body Radiation. 2. Spectral Reflectance Curves (water, vegetation, soil etc.) 3. Microwave Remote Sensing- introduction, Passive Microwave Remote Sensing, Radar Imaging 4. Hyperspectral Remote sensing 5. Sources of Remote Sensing Data and Information 6. Applications of Remote Sensing SKILL DEVELOPMENT COMPONENT Advanced Remote Sensing (using Industry Standard Image Processing Software): 1. Retrieve of Remote Sensing Data from Bhuvan & USGS portal. 2. Image Processing</th>	Advanced Remote Sensing (Industry Standard Image Processing Software) PAPER- V	GENERAL EDUCATION COMPONENT 1. Law of Radiation (Plank's law, Wein's law, Stefen Bolzmann's law), Black Body Radiation. 2. Spectral Reflectance Curves (water, vegetation, soil etc.) 3. Microwave Remote Sensing- introduction, Passive Microwave Remote Sensing, Radar Imaging 4. Hyperspectral Remote sensing 5. Sources of Remote Sensing Data and Information 6. Applications of Remote Sensing SKILL DEVELOPMENT COMPONENT Advanced Remote Sensing (using Industry Standard Image Processing Software): 1. Retrieve of Remote Sensing Data from Bhuvan & USGS portal. 2. Image Processing						
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