

Chaudhary Ranbir Singh University, Jind (Established by the State Legislature Act 28 of 2014



Certificate Course in Geoinformatics

Programme Structure

	Programme Structure	
Objective	To create professional human resource in the field of Geoinformatic	
	technology equipped with IT and Information Management to cater to	
	global Geo-informatics industry requirements.	
Duration	3 Months or 48 Hours	
Intake	30 Students	
Reservation	1. Within Intake: As per reservation policy of Government of	
	Haryana	
	2. Over and Above the sanctioned Intake	
2	a. Kashmiri Migrants – 02 Seats	
	b. International Students – 10 Seats	
Eligibility	Graduate in Engineering, IT, Computer Science, Agriculture, Geography,	
*	Science, Commerce and Management, from any recognized	
	University/Institution of National importance with a minimum of 50%	
	marks or equivalent grade (45% marks or equivalent grade for Scheduled	
	Caste/Scheduled Tribes)	
Selection	70 % weight age of Graduation Marks and 30 % weight age of Senior	
Procedure	Secondary Marks	
Medium of	English/Hindi	
Instruction		
Medium of	English/Hindi	
Expression		
Examination	The mode of examination shall be online and of multiple choice type. The	
	paper setting and evaluation shall be purely internal.	
Credit/Grade	A+	
Interpretation	85 % or above (Equivalent to DISTINCTION)	
	A	
	Less than 85 % to 60 % (Equivalent to FIRST CLASS)	
	В	
	Less than 60 % to 50 % (Equivalent to PASS)	
	C	
	Less than 50 % to 45 %	
Mode	Course shall be in Online mode and classes will be held on Saturday and	
	Sunday.	
Note:		

Note:

- 1. Fees for the course shall be 5000 /-.
- 2. Minimum 10 admissions are required to start the course.
- 3. Fees shall be same for all the reservation categories,
- 4. No concession in the fee shall be allowed.
- 5. Fees once paid shall not be refunded in case of admission withdrawal.

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Certific	cate Course in Geoipformatics			
Session: 2023-24 Part A — Introduction				
Name of the Course	Certificate Course in Geoinformatics			
Course Code	GEO-23/C - 101			
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. provide knowledge about Remote sensing and GIS. 2. understand the uses of these techniques in Geography. 3. understand the latest technology in GIS. 4. provide awareness about Remote sensing and GIS. 5* acquire knowledge of functioning of remote sensing and GIS.			
Max. Marks: 100 Internal Assessment Marks: 40. End-Term Exam Marks: 60	Time:2 hours			

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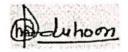


Part B- Contents of the Course

Instructions for Paper-Setter

There will be end term examination at the end of the programme. It will be consisted of 30 multiple choice questions. Each question carry 2 marks.

	Topics	Contact Hours
1.		
2.	Aerial photographs: Definition, Scope, Geometry, Their types and advantages.	
3.	Remote sensing: Definition, Scope, origin and history of development in Remote Sensing	
4.	Stages of Remote Sensing: Characteristics and application.	
5.	Electromagnetic Radiation and Electromagnetic Spectrum.	
6.	Spectral Signature of different features of earth surface.	
7.	Sun synchronous and Geostationary Satellites: characteristics, geometry and applications.	
	Types of Sensors: Optical (Push broom and Whiskbroom), Microwave, Sonar, Lidar.	
9.	Characteristics of Sensor: Spatial, Spectral, Radiometric and Temporal	
10.	Indian Space Programme: Present and Future perspectives	
11	NDVI and NDWI: Characteristics and their application.	
12.	Geographic Information System: Definition, Evolution and Historical development.	
13.	Components of Geographic Information System: Characteristics and Applications.	
	Various functions of Geographic Information System: Characteristics and their	
15	Spatial and Non-Spatial Data: Source and Characteristics and their uses in GIS.	
16	Raster and Vector model: Characteristics, Uses, Advantages and Disadvantages	
17	Data Input: Scanning of maps, Errors, Editing and Cleaning of data.	24
17.	Introduction to Global Positioning System: Definition, Scope, Characteristics	
	and their Applications.	
10	Space, Control and User segments: Definition, Scope, Characteristics and their	
	uses.	
20	IRNSS: Definition, Scope, Characteristics, Uses and Applications.	700 H
20.	Downloading and Working on Google Earth, Bhuvan and USGS data.	
21.	Application of Remote Sensing and GIS in Natural Resource Management	
22.	Application of Remote Sensing and GIS in Agriculture and Forest Management	
23.	Application of UAV's (Drone) in Agricultural and Settlement Analysis	
24.	Application of UAV's (Drolle) in Agricultural and Settlement Allarysis	

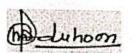






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nstructions for practical examiner: There will be Viva-voce exam for internal mark	S.
Distribution of marks for evaluation	
/iva-Voce = 40 marks	
Practical consisting of 24 exercises on the below mentioned themes: -	
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Introduction to SAGA GIS (1 exercise)	
2. Understanding Image in SAGA GIS (1 exercise)	\$10 m
3. Visual Interpretation of Image in SAGA GIS (1 exercise)	
4. Georeferencing and Extraction of Data (1 exercise)	24
Mosaicking Image in SAGA GIS (1 exercise)	1 1 1 1 1 1 1 1 1
6. Subsetting of Image in SAGA GIS (1 exercise)	A STATE OF THE STA
7. Introduction to Filters in SAGA GIS (1 exercise)	S HAMP IN
8. Supervised Classification in SAGA GIS (1 exercise)	State of the same of the
Unsupervised Classification in SAGA GIS (1 exercise)	
10. Change Detection in SAGA GIS (1 exercise)	
11. Introduction to QGIS (1 exercise)	
12. Georeference Image in QGIS (1 exercise)	
13. Image to Image registration in QGIS (1 exercise)	
14. Making of Shapefiles in QGIS (1 exercise)	W
15. Digitization in QGIS (3 exercise)	, 1 , 1 , 1 , 1
16. Buffering in QGIS (1 exercise)	the fall of the
17. Spatial Data Queries in QGIS (1 exercise)	A 100
18. Non-Spatial Data Queries in QGIS (1 exercise)	A STATE OF THE STA
19. Calculating Brightness Temperature in QGIS (2 exercise)	
20. Map Composition in QGIS (2 exercise)	. Programme
Suggested Evaluation Methods	£h.'
> Practicum	End-Term
Class Participation: NIL	Examination:
Seminar/Demonstration/Viva-voce/Lab records etc.:40 Marks	
Mid-Term Exam: NIL	60 Marks
• Iviid-Term Exam: NIL	30 1/141111





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Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Bhatta, B. (2010) Remote Sensing and GIS, Oxford University Publications.

2. Burrough, P.A., and McDonnell, R.A. (2000) Principles of Geographical Information System-Spatial Information System and Geo-statistics. Oxford University Press

3. Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik Suchana Pranali, Sharda PustakBhawan, Allahabad

4. Heywoods, I., Cornelius, S and Carver, S. (2006) An Introduction to Geographical Infromation system. Prentice Hall.

5. Jha, M.M. and Singh, R.B. (2008) Land Use: Reflection on Spatial Informatics Agriculture and Development, New Delhi: Concept.

6. Nag, P. (2008) Introduction to GIS, Concept India, New Delhi.

7. Burrough, P.A. and McDonnell, R. (2016): Principles of Geographic Information Systems. Oxford University Press, Oxford.

8. Chang, K. T. (2017): Introduction to Geographic Information Systems. Tata McGraw Hill Publications Company, New Delhi.

9. Demers, M. N. (2008): Fundamentals of Geographic Information Systems. John Wiley and Sons, Singapore.

10. Rahman A., (2017): Global Positioning System: Concept, Technique and Application, New Age International Pvt. Ltd, New Delhi.

11. Grewal M. S., (2013): Global Navigation Satellite Systems, Inertial Navigation and Integration, Willey-Blackwell.