



SOBAN SINGH JEENA UNIVERSITY, ALMORA M.Sc.REMOTE SENSING AND GIS



**Centre of Excellence for Natural Resources Data Management System in Uttarakhand
Soban Singh Jeena University, Almora-263601,Uttarakhand, India**

<https://ssju.ac.in>

Soban Singh Jeena University, Almora



Prof. S.P.S. Bisht
Vice Chancellor
Soban Singh Jeena
University, Almora

It is a matter of pleasure that the Soban Singh Jeena University has inducted two-year M.Sc. Remote Sensing and GIS course in higher education through its Centre of Excellence for Natural Resource Data Management System in Uttarakhand. The Centre of Excellence established by the University with the support of Department of Science and Technology, Government of India, aims to build education and applied research capabilities in Remote Sensing and GIS for various stakeholders, viz., academia, governance, industry and civil society.

Remote Sensing and GIS is a newly growing discipline which technologies, i.e., GPS, DGPS, UAV, Remote Sensing and Digital Mapping has wide applications in governance, planning, management, monitoring, navigation, and in advanced research in physical/ social sciences and humanities. Considering the human resource requirement in government, private, academic and non-governmental sectors, the Soban Singh Jeena University has done an excellent and a far-sighted work by offering Master's degree in Remote Sensing and GIS.

I appreciate the efforts of Founder Director of Centre, Prof. J.S. Rawat who has worked very hard and ensured that the Centre reaches up to its logical culmination. Presently, Prof. Rawat is associated as adviser and visiting professor, SSJ University, Almora. Centre is utilizing his skills and efficiency. Currently Dr. Deepak is leading the centre as coordinator. The centre is achieving new mile stone under his supervision. I wish the success of the Centre and sincerely hope that it emerges as one of the top Centers of newly emerging hi-tech education and applied research in Remote Sensing and GIS and becomes a beacon of light for the students and aspirants in the field.

Date: 09 April, 2024

Place: Almora

(Prof. Dr. S.P.S. Bisht)



Prof. J.S. Rawat
Advisor and Visiting Professor
SSJ University, Almora
&
Former National Geospatial
Chair Professor (under DST, Delhi)
Founder Director
COE NRDMS in Uttarakhand

Centre of Excellence for NRDMS in Uttarakhand Soban Singh Jeena University, Almora

The Centre of Excellence for Natural Resources Data Management System (COE NRDMS) in Uttarakhand looks at building of infrastructure in an integrated manner to develop a common Digital Platform of all the government departments with specific reference to the Uttarakhand State. Based on the digital platform, the Centre aims i) to bring all the government departments together for integrated planning and coordinated implementation of infrastructure connectivity projects; and ii) to develop a single window system that allows departments interested in building infrastructure. For this purpose we need skilled human resource and advanced research in GI Science Technologies, i.e., Remote Sensing, Geographical Information System, Artificial Intelligence, GPS and DGPS. To fulfill these needs, with the help technical and financial support of the NRDMS Division of D.S.T. Government of India, the COE NRDMS in Uttarakhand was established at the Kumaun University, SSJ Campus Almora in 2008. For human resource development in GI Science technologies, two years Master's Degree programme, viz., M.Sc. Remote Sensing and GIS (30 seats) was started through this Centre and the first batch was passed out in 2010. Since that more than 300 students have passed out from this

Centre out of these about 90% students are working as GIS Experts in State Government of Uttarakhand, W. Bengal, Maharashtra and Haryana; doing research in different National and State Research and Development Institutions, and in abroad also; and working as GIS Consultant, GIS

Developer and GIS Analyst/Technicians in different GIS Companies, Industries and Corporate sectors in different cities of our country, with the constant technical support of this Centre, for developing GIS infrastructure of different line departments as per their own needs, the State Government of Uttarakhand has established GIS Cells in all 13 district headquarters under the control of District Magistrates, and to run these GIS Cells one GIS Analyst and one GIS Technician have been appointed at each District GIS Cell. It's a matter of great pride for us that all these skilled 13 GIS Analysts and 13 GIS Technicians in District GIS Cells of the Uttarakhand State are the product of this Centre.

I appreciate the efforts of the newly born SSJ University to resume the activities of this Centre without any interruptions. I wish the success of the Centre and sincerely hope that it will create world-class GI Science technologies based infrastructure for a modern and advanced digital India.

Date-9th April, 2024
Place: Almora



(Prof. J.S. Rawat)

Centre of Excellence for NRDMS in Uttarakhand Soban Singh Jeena University, Almora



Dr. Deepak
Director &
Course Coordinator

It is a matter of great pleasure for me that the Centre of Excellence for NRDMS in Uttarakhand (established with the help of financial and technical support of the Department of Science and Technology, Govt. of India) is presently working as a National Centre of higher education where each year 30 students from different states of our country are pursuing their Master's Degree in Remote Sensing and GIS- a newly inducted self-employment/employment oriented hi-tech programme. Presently our alumni are working in different highly prestigious National Research and Development Institutions, in different State Government Departments and in highly reputed Industries and GIS companies located in different parts of our country. The objective of the Centre is to build hi-tech education and applied research compatibility in Remote Sensing and GIS for various stakeholders, viz., academia, governance, industry and civil society.

I wish all the best to the researchers and students of the Centre with regard to education and research programme on Remote Sensing and GIS.

Date: 09 April, 2024
Place: Almora



(Dr. Deepak)

ABOUT THE COURSE

The Remote Sensing and GIS is a newly emerging discipline developing gradually worldwide. In view of its significance and importance in the activities of the academic community, governance, industry and civil society, it has been inducted in higher education by different Universities of the India and world to produce skilled human resources. The Soban Singh Jeena University, Almora has started M.Sc. Remote Sensing and GIS Course in its Centre of Excellence for NRDMS in Uttarakhand with high-tech equipment and laboratory supported by the Department of Science and Technology, New Delhi. M.Sc. Remote Sensing and GIS is a four-semester course spread over two years, aims at imparting state-of-the-art knowledge in Remote Sensing and GIS to meet the emerging demands of GIScience knowledge in different sectors of development.

ELIGIBILITY FOR ADMISSION

Candidates should not have less than 45% marks in aggregate in Bachelor Degree with Geography/Geology/Forestry/Botany/Mathematics/Computer Science/ Information Technology.

SELECTION PROCEDURE

Selection of candidates will be made through Personal Interview/Entrance Exam merit basis.

TOTAL NUMBERS OF SEATS: 30

FEE STRUCTURE

Rs. 42,000/- per annum (Rs. 40,000/- Programme Fee, Rs. 2000/- Campus Fee.

ADMISSION: Online Admission link- <https://ssju.ac.in/>

COURSE STRUCTURE

M.Sc. Remote Sensing and GIS, Semester System Structure

Subject Name			
Subject Code	Semester I		Marks
RSGIS 101	Spatial Geography, Mathematics and Basics of Computer		100
RSGIS 102	Principles of Aerial Photographs and Photogrammetry		100
RSGIS 103	Principles of Remote Sensing		100
RSGIS 104	Digital Image Processing		100
RSGIS 105	Practical: Fundamentals and Analysis of Geospatial Data		100
Total Marks			500
Semester II			
RSGIS 201	Geographic Information System and Digital Cartography		100
RSGIS 202	Programming Languages for Geospatial Data		100
RSGIS 203	Fundamentals of Earth Positioning Systems and Unmanned Aerial Vehicle		100
RSGIS 204	Advanced Remote Sensing		100
RSGIS 205	Practical: Programming Languages and Surveying		100
Total Marks			500
Semester III			
RSGIS 301	Advanced GIS		100
RSGIS 302	Web GIS		100
RSGIS 303	Applications of Geospatial Science for Resource Management		100
RSGIS 304	Research Methodology and Project Management		100
RSGIS 305	Practical: Project Dissertation Report		100
Total Marks			500
Semester IV			
RSGIS 401	Synopsis Outline		100
RSGIS 402	Major Project Dissertation Report	Internal Examiner	100
		External Examiner	100
RSGIS 403	Project Presentation		100
RSGIS 404	Project Viva Voce		100
Total Marks			500

STUDENTS

At present, 30 Students from different states (i.e., Assam, Bihar, Delhi, Jharkhand, Madhya Pradesh, Uttar Pradesh, Uttarakhand, and West Bengal) have been admitted in M.Sc. Remote Sensing and GIS Part I and Part-II. The success of our students is our ultimate testimonial and our students are living testimony to our efforts which go into building the relationships with Stakeholders (around the world) of development planning, industry and society on the whole.

INFRASTRUCTURE

The NRDMS Division of the DST Government of India under its programme on Setting up Centre of Excellence for NRDMS in Uttarakhand in provided equipment grant for establishing hi-tech Remote Sensing and GIS Laboratories.

Remote Sensing and GIS Lab

The laboratory consists of the following hardware and software: **Hardware-** Server with Uttarakhand Geoportal-1,

Workstations with LAN- 20, UPS 5KVA, GPS-10, DGPS-1, Plain table-2, Total station- 2, Dumpy Level-1, Prismatic Compass-2, LCD; **Software-** Arc-info, ArcGIS, ERDAS Imagine, Map Source, eCognition, ENVI, QGIS.



Remote Sensing and GIS Library

The Remote Sensing and GIS Library consists of the following books, Reports, GIS Maps, Journal, News Letters and RS Data: **Books-** Two hundred books on GIS/GPS/Remote Sensing/GI Science, Master's **Degree Dissertations in Remote Sensing and GIS**. **Journals-** Asian Journal of Geo-Informatics, GIS Development, Location and **News Letters** - ESRI News Bulletin and **RS Data-** LANDSAT, SENTINEL, MODIS, LISS-III, LISS-III PAN merged, CARTOSAT-1

REMOTE SENSING AND GIS LABORATORY



LIBRARY



CLASS ROOM



DGPS

PDA

FACULTY

Prof. J.S.Rawat, Visiting Professor
Dr. Deepak, Course Coordinator
Dr. Himani Bisht, Faculty
Miss. Sarita Palni, Faculty

SUPPORTING STAFF

Technical Assistant (To be appointed)
Office Superintendent (To be appointed)
Mr. Manoj Bisht, Office and Lab Attendant

VISITING FACULTY

Dr. Prathivish Nag, Formerly Surveyor General of India and Vice Chancellor, Mahatma Gandhi Kashi Vidyapeeth, Varanasi-221002, U.P.

Dr. D. Dutta, Formerly Advisor and Director, NRDMS Division in DST, New Delhi.

Dr. P.S.Acharaya, Formerly Advisor and Director, NRDMS Division, Department of Science and Technology, New Delhi

Sri. H.B. Madwal, (Ex-Director, Survey of India) 100/25, Mansarover Colony Baleepur, Dehradun

Dr. D.N. Pant, (Retd. Professor IIRS), 209/01, Mansarover Colony Baleepur, Dehradun-248001.

Dr. S.P.S Khuswaha, Scientist SG and Head, Forestry and Ecology Division, IIRS Dehradun

Dr. C.S.Walia, Formerly Principal Scientist, National Bureau of Soil Science, ICAR, New Delhi.

Dr. Ram Mohan Rao, Scientist, 'SE' National Remote Sensing Agency, CRF Colony, Bala Nagar, Hyderabad, Andhra Pradesh.

Dr. Afroz Ahmed, Formerly Director, Narmada Control Authority, Ministry of Water Resources, Indore (MP) Dr. R.C.S. Taragi, GIS Coordinator, Qatar (Middle East)

Mr. C.M Adhikari, GIS Engineer, ESRI, New Delhi

Prof. D.D. Chauniyal, Department of Geography, H.N.B. Garhwal, Srinagar Uttarakhand.

Dr. Sadhana Jain, Scientist SE, Urban and Regional Planning, IIRS, Dehradun.

OUR ALUMNI IN JOB/RESEARCH WORK AT

Institutions/departments under Central Governments

Indian Metrological Department, New Delhi; Forest Survey of India, Dehradun; Snow & Avalanche Study Establishment (SASE), DRDO, Chandigarh; Indian Agriculture Research Institute Delhi etc.

Institutions/departments under state Governments

Government of Uttarakhand, Urban Development and Housing Department, Government of Sikkim; Forest Department, Government of Sikkim; Sikkim, Land Revenue & Disaster Management Department, Government of Sikkim; Himachal Pradesh Forest Department, Shimla; Punjab Remote Sensing Centre, Punjab.

Leading Private firms

PAN India Consultant Pvt. Ltd, Gurgaon Haryana, ML Infomap Pvt Ltd., New Delhi; Exzeo Software Pvt. Ltd., Noida; RMSI, Noida, U.P.; Navteq India Pvt. Ltd., Gurgaon; SGS Infotech, Gurgaon, Haryana; Synergy Engineering and Environmental Solution, Maharashtra; Spatial Decision, Noida, Uttar Pradesh; SATPALDA Vaishali, Delhi; TCS Delhi etc.



For more details contact to: Dr. Deepak, Course Coordinator, Remote Sensing and GIS; and Director, Centre of Excellence for NRDMS in Uttarakhand, Soban Singh Jeena University, Campus, Almora, Contact No. 05962-298830, 9837558203, ID: rsgissju@gmail.com; Prof. J.S. Rawat (Visiting Faculty) 7533983533; Dr. Himani Bisht (Faculty) 9634710158; Ms. Sarita Palni (Faculty) 8449353183

Our Alumina Students:

In Forgien Countries:

1. Dr. Saurabh Kaushik, Postdoctoral Scholar, Byrd Polar and Climate Research Center-Ohio State University, USA, 2014-2016
2. Mr. Bismay Ranjan Tripathi, Junior Research Fellow, Tsinghua University, Beijing, China, 2015-2017.
3. Jitendra Rathor, Research Scholar, USA, 2017-2019
4. Tanuj Parik, Research Scholar, University of Twente, Neatherlands, 2018-2020

In Uttarakhand State Governement :

1. Mr. Navneet Gahlot, GIS Analyst, GIS Cell, Almora
2. Mr. Uma Shankar Negi, GIS Analyst, GIS Cell, Almora
3. Mr. Sourabh Sah, GIS Technicien, GIS Cell, Bageshwar
4. Mr. Arjun Devali, GIS Analyst, GIS Cell, Pithoragarh
5. Mr. Mukul Majila, GIS Analyst, GIS Cell, Chamoli
6. Mr. Suresh Dosad, GIS Analyst, GIS Cell, Bageshwar
7. Mr. Mohit Bahuguna, GIS Analyst, GIS Cell, Haridwar
8. Mr. Neeraj Farshwan, GIS Analyst, GIS Cell, Champawat
9. Mrs. Deepa Gariya, GIS Analyst, GIS Cell, Nainital
10. Miss. Parul Bokadia, GIS Analyst, GIS Cell, Haridwar

In Other State Governments

1. Mr. Dilli Ram Chetri, GIS Specialist, Urban Development and Housing Department, Government of Sikkim, 2009-2011
2. Mr. Mahander, GIS Specialist, Urban Development and Housing Department, Government of Sikkim, 2009-2011
3. Mr. Sabina, GIS Specialist, Urban Development and Housing Department, Government of Sikkim, 2009-2011
4. Mr. Amrit, GIS Training Officer, Land Revenue & Disaster Management Department, Government of Sikkim, 2009-2011
5. Mr. Hemlata Rai, GIS Executive, Forest Department, Government of Sikkim, 2009-2011

Different Research & Development Institutions in India

1. Mr. Amar Singh, Research Associate, India Metrological Department, New Delhi, 2008-2010
2. Miss Alpana, Junior Research Fellow, Indian Agriculture Research Institute, 2008-2010
3. Miss. Chetna Lohani, Technical Assistant, M.Sc Remote Sensing and GIS, Kumaun University S. S. J. Campus Almora, Uttarakhand. 2013-2015
4. Mr. Vineet Pal, Senior Research Fellow, Uttarakhand Space Application Centre, Dehradun, Uttarakhand, 2013-2015
5. Miss. Priyanka Sah, Junior Research Fello, G.B Pant, Almora (GBPIHED), Koshi, Almora, Uttarakhand, 2013-2015
6. Mr. Pawan Thakur, Junir Research fellow, G.B. Panth Kullu, 2013-2015.
7. Mr. Kishore Kandpal, Junior Research Fellow, CSIR- IHB, Himachal Pradesh, 2014-2016
8. Mr. Neeraj Kumar, Junior Research Fellow, FIS, Dehradun, 2014-2016
9. Miss Jyotsana Joshi, Project Scientiste, Agriculture Département, Dehradun, Uttarakhand, 2014-2016
10. Kamna Pokhariya, Junior Research Fellow, Wildlife Insitute of India, Dehradun, 2014-2016
11. Miss. Avantika Latwal Junior Research Fellow, GBPIHED, Kosi Katarmal Uttarakhand, 2014-2016
12. Miss. Reetu Sharma, Research Analyst, Haryana Space Application Centre Haryana, 2014-2016
13. Miss. Shahnoor Gaur, Research Analyst, Haryana Space Application Centre Haryana, 2014-2016
14. Mr. Anand Kumar, Junior Research Fellow, C.O.E. NRDMS, Kumaun University, Uttarakhand, 2015-2017
15. Mr. Tapan Ghosh, Punjab Remote Sensing Centre (PRSC), Ludhiana, Punjab (India), 2015-2017
16. Mr. Gajendra Pippal, Junior Research Fellow, NRDMS Division Delhi DST, 2015-2017
17. Mr. Aniruddha Debnath, Junior Research Fellow, Urban Regional Study Department (URSD) IIRS, ISRO, Dehradun, 2016-2018
18. Mr. Tilok Chetri, Junior Research Fellow, North Eastern Space Application Centre (NESAC), 2016-2018
19. Mr. Bhriku Kumar Kalita, Junior Research Fellow, North Eastern Space Application Centre (NESAC), 2016-2018

At Different Corporate Sectors in India

1. Mr. Mahesh, Digital Cartographer, TOM TOM, Pune, Maharashtra, 2009-2011
2. Mr. Vasim Sheikh, Digital Cartographer, TOM TOM, Pune, Maharashtra, 2009-2011
3. Mr. Mahadev Patil, GIS Analyst, Genesys International Corporation Limited Mumbai, 2013-2015