

Curriculum Vitae

Dr. M. Farooq Iqbal Buzdar

Assistant Professor

HEC Approved MS and PhD Supervisor in Physical Sciences (Meteorology, Remote Sensing and Geographical Information Systems)

Incharge Graduate Programs

Convener, Departmental Academic Review Committee (DARC)

Member Board Of Studies (BOS) for the slot of Senior Most Assistant Professor, Department of Meteorology, CUI, Islamabad

Member of Editorial Board of *Journal of Applied and Emerging Sciences*

Member Departmental Advisory Committee (DAC)

Convenor, Departmental Graduate Admission Committee (DGAC)

Lead Scientist of Applied Geo-Informatics Research Group (AGRG)

Member Earth and Atmospheric Remote Sensing Lab (EARL)

Affiliation:

Department of Meteorology, COMSATS University Islamabad (CUI, formally CIIT) , Park Road, Tarlai Kalan, Islamabad, 45550, Pakistan.

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Personal Email: farooqbuzdar@gmail.com

Workplace Website: <http://ww3.comsats.edu.pk/Meteorology/>

Personal Website: www.farooqbuzdar.com

Google Scholar: <https://scholar.google.com.pk/citations?user=4d45zmMAAAAJ&hl=en>

Academic Metrics: Google Scholar (Citations =344; h-index = 10; i10-index =10) as of August 2021

ORCID ID: <https://orcid.org/0000-0002-5535-0839>

Research Group Website: <http://ww3.comsats.edu.pk/Meteorology/AGRGGroup.aspx>

Research Group Website: <http://ww3.comsats.edu.pk/earl/>

Linkedin Profile: linkedin.com/in/buzdar

Twitter Handle: @DrFarooqBuzdar

Research Interests:

Applications of Remote Sensing and GIS in different fields including but not limited to Satellite Based Precipitation Assessment; Variabilities, Trends and Teleconnections of Precipitation; Drought Assessment; Oil spills detection using Synthetic Aperture Radar; Earthquakes Precursor Anomalies Assessment; Satellite Based Detection of Volcanic SO₂, Monitoring of CO₂ and CH₄; Spatiotemporal Land Use Land Cover Change analysis and Erosion Risk Mapping; Limestone Exploitation area assessment; Assessment of Urban Sprawl; Climate Variability on Snow Cover; Hydrological Modelling in Changing Climate of Pakistan; Water Resource Modelling of Hill Torrent; Impacts of Climate Change on Flooding; Transboundary runoff assessment using open sources

Professional Experience:

Organization	Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.
Working As	Head of Department (HoD)
Period (From-to)	June 01, 2024 – 31 st August 2024
Key Responsibilities	Looking after all the affairs of the Department including Admission, Teaching, Research, Administration, Industry linkages, Commercializing, Seminar/Conferences, Summer camps.

Organization	Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.
Working As	Assistant Professor
Period (From-to)	January 16, 2014 – Present
Key Responsibilities	Teaching both Undergraduate (BS) and Graduate (MS and PhD) level courses; Convener and Member of key Committees including Board of Studies (BOS), Departmental Academic Review Committee (DARC), Departmental Advisory Committee (DAC), Admission, Proctorial Board, Transportation Committee and Coordination; Research and Project Submission and report writing; Thesis Supervision and Co-Supervision of both Undergraduate and Graduate level; Curriculum Development; Literature Review; Field Data Collection; Survey and Map Development

Organization	Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.
Working As	

Period (From-to)	<p>Lecturer June 25, 2009 – January 15, 2014</p>
Key Responsibilities	<p>Teaching both Undergraduate and Graduate level courses; Member of key Committees regarding Admission, Academics, Proctorial Board, Transportation Committee and Coordination; Research and Project Submission and report writing, Thesis Supervision and Co-Supervision of both Undergraduate and Graduate level; Curriculum Development; Literature Review; Field Data Collection; Survey and Map Development</p>
Organization	<p>Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.</p>
Working As	<p>Research Associate</p>
Period (From-to)	<p>March 19, 2009 – June 24, 2009</p>
Key Responsibilities	<p>Develop plans, guidelines and conduct research in scientific projects; Maintain data archives, Collect sources of information and keep record for evaluation; Responsible for design, programming, quality control and documentation; Integrate various spatial solutions within enterprise architectures; Perform on-site installations, as well as train end-users; Stay keeps in touch with industry innovations in technology, software and hardware; Develop maps and datasets for supplement analysis; Contribute to publications and presentations.</p>
Organization	<p>The Daily Mail (Daily English Newspaper), Islamabad, Pakistan.</p>
Working As	<p>GIS Officer</p>
Period (From-to)	<p>January 01, 2008 – February 28, 2009</p>
Key Responsibilities	<p>Coordination with relevant Public and Private Sector Organizations regarding; Geospatial techniques and applications; Preparation of Technical Proposals of GIS; Scanning; Digitizing; Geo-referencing; Data Collection; Survey and Map Development; Spatial Database creation, Maintenance and Analysis</p>
Organization	<p>MTBC (USA-based Company), Islamabad, Pakistan.</p>
Working As	<p>Billing Executive</p>
Period (From-to)	<p>December 07, 2004 – September 30, 2006</p>
Key Responsibilities	<p>To Perform Medical Billing for Offshore Clients; Maintaining Records and Updating patient's Ledger online; To update the Team Leader on daily basis and</p>

act as his backup in his absence; Research, analyze and prepare appeals when claims are rejected; Design appeal letters of claims with late filling; Follow-up of unpaid claims; Online conversation with difference clients through E-mail and Chat

Organization	The Daily Mail (Daily English Newspaper), Islamabad, Pakistan.
Working As	Network and Web Administrator
Period (From-to)	January 01, 2004 – December 06, 2004
Key Responsibilities	Diagnosing & troubleshooting of LAN and Internet problems; Disk Maintenance, Backup, and Recovery; Operating System and Software Maintenance; Network File Systems; Coordinate computer system hardware and software maintenance agreements with vendors; Designing and reconstruction of official website www.dailymailnews.com; Updating the website using FTP on daily basis; Managing E-mails of Outlook Express & forwarding them to concerned person; Maintaining records of news archives.

Academic Background:

Title of Qualification	Doctor of Philosophy in Meteorology (Specializations in Remote Sensing and GIS)
Date (From-to)	Spring 2012 – Spring 2018
Name of University	Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.
Thesis Title	<i>Spatiotemporal Assessment of Precipitation for Hydrological Applications over Diverse Topography of Pakistan</i>
CGPA	3.67/4.00
Major Courses	Spectroscopic Theory; Applied Remote Sensing and GIS; Numerical Modeling; Statistical Data Analysis; Programming Language; Research and Project Writing Skills
Title of Qualification	Master of Sciences in Meteorology (Specializations in Remote Sensing and GIS)
Date (From-to)	Fall 2006 – Spring 2008
Name of University	Department of Meteorology, COMSATS University Islamabad (CUI), Islamabad, Pakistan.

Project Title	<i>Impact of Climate Variability on Snow Cover in Northern Pakistan using GIS and RS</i>
CGPA	3.10/4.00
Major Courses	Remote Sensing; Geographical Information System; Advance Remote Sensing; Image Processing and Analysis; Remote Sensing and GIS Lab; Earth Sciences and Cartography

Title of Qualification	Bachelor of Sciences in Information Technology (BS-IT)
Date (From-to)	2001 – 2005
Name of University	Department of Computer Sciences, Islamabad, Pakistan.
Project Title	Development of LAN Chat Messenger using Visual Basic Programming
Division	First
Major Courses	Major in Networking, Software Engineering, Databases, Internet programming, Cost Accounting, Accounting Information System, IT Marketing, Human resource Management

Title of Qualification	Intermediate with Computer Sciences (ICS)
Date (From-to)	1999 – 2000
Name of Board	Indus College Layyah, Board of Intermediate and Secondary Education (BISE), D. G. Khan.
Division	First
Major:	Computer Sciences, Statistics and Mathematics

Title of Qualification	Secondary School Certificate (SCC)
Date (From-to)	1997 – 1998
Name of Board	Government Boys High School, Taunsa Sharif, Board of Intermediate and Secondary Education (BISE), D. G. Khan.
Division	First
Major:	Chemistry, Biology, Physics and Mathematics

Publications:**Impact Factor Journals****Cumulative Impact Factor = ~ 50**

- Ozair, M., **Iqbal, M.F.**, Mahmood, I., Naz, S. (2024) SAR-based oil spill detection and impact assessment on coastal and marine environments. *Acta Oceanologica Sinica*, Accepted. Impact Factor: **1.40**
- Bashir, A.B., **Iqbal, M.F.** (2023) A Comparison of Address Matching Techniques to Improve Geocoding: A Case Study of Islamabad, Pakistan. *The Nucleus* 60(2) 146–153. HJRS category Y
- Kiran, S.N., **Iqbal, M.F.**, Mahmood, I. (2023) Assessing the impacts of climate change on flooding under Coupled Model Intercomparison Project Phase 6 scenarios in the river Chenab, Pakistan. *Natural Hazards*, <https://doi.org/10.1007/s11069-023-05892-4> Impact Factor: **3.158**
- Khan, M.K.U., **Iqbal, M.F.**, Mahmood, I., Shahzad, M.I., Zafar, Q., Khalid, B. (2023) Evaluation of precipitation products over different climatic zones of Pakistan. *Theoretical and Applied Climatology*, <https://doi.org/10.1007/s00704-022-04355-3>. Impact Factor: **3.410**
- Naz, S., **Iqbal, M.F.**, Mahmood, I., Allam, M. (2021) Marine oil spill detection using Synthetic Aperture Radar over Indian Ocean. *Marine Pollution Bulletin*, 162, 111921. Impact Factor: **7.001**
- Nawaz, M., **Iqbal, M.F.**, Mahmood, I. (2021) Validation of CHIRPS satellite-based precipitation dataset over Pakistan. *Atmospheric Research*, 248, 105289. Impact Factor: **5.965**
- Mahmood, I., **Iqbal, M.F.**, Shahzad, M.I., Waqas, A. (2020) Investigation of earthquake thermal precursors in active tectonic regions of the world. *Journal of Geodynamics*, 141–142, 101785. Impact Factor: **2.673**
- Awais, M., Shahzad, M.I., Nazeer, M., Muhammad, I., Mehmood, S, **Iqbal, M.F.**, Yasmin, N., Shahid, I. (2018) Assessment of Aerosol Optical Properties using Remote Sensing Over Highly Urbanised Twin Cities of Pakistan. *Journal of Atmospheric and Solar-Terrestrial Physics*, 173, 37 – 49. Impact Factor: **2.119**
- Mahmood, I., **Iqbal, M.F.**, Shahzad, M.I. (2018) Precursor anomalies prior to 2006 Java and 2016 Yujing earthquakes. *Journal of Geophysics and Engineering*, 15 (4), 1506–1516. Impact Factor: **2.087**
- Iqbal, M.F.**, Athar, H. (2018) Validation of satellite based precipitation over diverse topography of Pakistan. *Atmospheric Research*, 201, 247 – 260. Impact Factor: **5.965**

- Iqbal, M.F.**, Athar, H. (2018) Variability, trends, and teleconnections of observed precipitation over Pakistan. *Theoretical and Applied Climatology*, 134 (1-2), 613 – 632. Impact Factor: **3.409**
- Rizwan, M., **Iqbal, M.F.**, Mahmood, I., Butt, F.M, Ullah, K. (2017) Predicting potential zones of hydrocarbon through seismic stratigraphy within the western Barents Sea, Norway. *International Letters of Natural Sciences*, 62, 52 – 60. Web of Science Indexed
- Mahmood, I., **Iqbal, M.F.**, Shahzad, M.I. (2017) Nepal Earthquake and Seismic Hazard in Himalayas. Science (E-Letter, 24 January 2017) <http://science.sciencemag.org/content/293/5534/1442/tab-e-letters>. Impact Factor
- Mahmood, I., **Iqbal, M.F.**, Shahzad, M.I., Qaiser, S. (2017) Investigation of atmospheric anomalies associated with Kashmir and Awaran Earthquakes. *Journal of Atmospheric and Solar–Terrestrial Physics* 154, 75 – 85. Impact Factor: **2.119**
- Mahmood, I., **Iqbal, M.F.**, A. Rizwan, M., Shahzad, M.I., Tariq, S. Ullah, K. (2017) An Investigation of 2013 Mw 7.7 Awaran Earthquake, Pakistan. *International Letters of Natural Sciences*, 61, 36 – 42. Web of Science Indexed
- Rizwan, M., **Iqbal, M.F.**, Shahzad, M.I. (2016) Seismic Stability Analysis of Soil Slope Using Numerical Model. *Geodynamics Research International Bulletin* 4(2), 1 – 7. Non-ISI Indexed
- Mahmood, I., **Iqbal, M.F.**, Shahzad, M.I., Waqas, A., Atique, L. (2016) Spatiotemporal Monitoring of CO₂ and CH₄ over Pakistan Using Atmospheric Infrared Sounder (AIRS). *International Letters of Natural Sciences*, 58, 35 – 41. Web of Science Indexed
- Mahmood, I., Shahzad, M.I., **Iqbal, M.F.**, Ullah, K., Waqas, A. Kidwai, A.A. (2016) Satellite Based Detection of Volcanic SO₂ over Pakistan. *Global NEST Journal*, 18, 1 – 8. Impact Factor: **1.134**
- Mahmood, I., Qureshi, S.N., Tariq, S., Atique, L., **Iqbal, M.F.** (2015) Analysis of Landslides Triggered by October 2005, Kashmir Earthquake. *PLOS Currents Disasters*. Scopus Indexed
- Mahmood, I., Kidwai, A.A., Qureshi, S.N., **Iqbal, M.F.**, Atique, L. (2015) Revisiting major earthquakes in Pakistan. *Geology Today*, 31(1), 33 – 38. ISI Indexed
- Iqbal, M.F.**, Khan, I.A. (2014) Spatiotemporal Land Use Land Cover change analysis and erosion risk mapping of Azad Jammu and Kashmir, Pakistan. *Egyptian Journal of Remote Sensing and Space Science*, 17, 209 – 229. Impact Factor: **6.393**

- Iqbal, M.F.**, Khan, M.R., Malik, A.H. (2013) Land Use Change Detection in the Limestone Exploitation area of Margalla Hills National Park (MHNP), Islamabad, Pakistan using Geo-spatial techniques. *Journal of Himalayan Earth Sciences* 46 (1), 89 – 98. ISI Indexed/HEC Recognized
- Ahmed, H., Khan, M.R., Panadero-Fontan, Rosario, Sandez, C.L., **Iqbal, M.F.**, Naqvi, S.M.S, Qayyum, M. (2012) Geographical Distribution of Hypodermosis (*Hypoderma* sp.) in Northern Punjab, Pakistan. *Kafkas Üniversitesi Veteriner Fakültesi Dergisi* 18, 215 – 219. Impact Factor: **0.633**
- Butt, M.J., Waqas, A., **Iqbal, M.F.**, Muhammad, G., Lodhi, M.A.K. (2012) Assessment of Urban Sprawl of Islamabad Metropolitan Area Using Multi-Sensor and Multi-Temporal Satellite Data. *Arabian Journal For Science and Engineering*, 37:101 – 114. Impact Factor: **2.807**
- Iqbal, M.F.**, Malik, A.H. (2010) Investigation of limestone exploitation area and its environmental impacts using GIS/RS techniques: A case study of Margalla Hills National Park, Islamabad, *Journal of Himalayan Earth Sciences*, 43, 31 – 31. ISI Indexed/HEC Recognized (2010)
- Butt, M.J., **Iqbal, M.F.** (2009) Impact of Climate variability on snow cover: A case study of Northern Pakistan. *Pakistan Journal of Meteorology*, 5(10), 53 – 63. HEC Recognized

Conference papers

- Iqbal, M.F.**, Athar. H. (2015) Evaluation of Remotely Sensed TRMM Satellite Precipitation with APHRODITE Gridded Precipitation over Pakistan, 11th International Geosciences Conference of the Saudi Society of Geosciences at King Saud University, Riyadh from 12 – 14 May, 2015.
- Iqbal, M.F.**, Malik, A.H. (2011) Spatiotemporal ecological mapping and monitoring of the Margalla Hills National Park (MHNP), Islamabad, Second International Conference On Aerospace Science & Engineering (ICASE-2011), 28-30 December, Islamabad.
- Iqbal, M.F.**, Lodhi, M.A.K., Butt, M.J., Ghaffar, A. (2009) Land cover classification of Islamabad region using Remote Sensing of Landsat Spatio-Temporal images. Proceedings of First International conference on Aerospace Science & Engineering (ICASE-2009) Islamabad, Pakistan pp. 259–266.
- Iqbal, M.F.**, Butt, M.J. (2008) Impact of climate change on snow cover in Northern Pakistan using RS & GIS, Proceedings of National Seminar on State and Challenges of GIS and Remote Sensing Applications in Water Sector Islamabad, 134–144.

- Iqbal, M.F.**, Khan, M.R. (2011) Spatiotemporal snow cover assessment and climatic impacts on water resource management: a case study of Northern Pakistan, International Workshop on Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region 22-24 November, Islamabad, Pakistan. (Abstract).
- Khan, M.R., **Iqbal, M.F.**, Waqas, A., Latif. M. (2011) Role of Remote Sensing and GIS in climate change research: case studies of Asia-Pacific with special focus on water resources, International Workshop on Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region 22-24 November, Islamabad, Pakistan (Abstract).
- Tariq, S., **Iqbal, M.F.**, Waqas, A. (2011) Diagnostic Impact of Heavy Rainfall 2010 on Crop Production in Pakistan, International training workshop on Regional Climate Change and Its Impact Assessment, (extended Abstract), September 26-29, 2011 Beijing, China.
- Iqbal, M.F.**, Malik, A.H. (2010) Investigation of limestone exploitation area and its environmental impacts using GIS/RS techniques - A case study of Margalla Hills, National Park (MHNP), Islamabad, Abstract published in Earth Sciences Pakistan 2010: New Developments September 20-22, 2010, Baragali Summer Campus, Department and National Centre of Excellence in Geology, University of Peshawar (extended Abstract).
- Iqbal, M.F.**, Malik, A.H., Butt, M.J. (2010) Impact of vegetation on the environment of Margalla Hills National Park Islamabad using remote sensing techniques, Proceedings of Benefiting from Earth Observation: Bridging the Data Gap for Adaption to climate change in the Hindu Kush-Himalayan Region”, 4-6 October 2010, Kathmandu, Nepal. (Extended Abstract).
- Iqbal, M.F.**, Lodhi, M.A.K., Butt, M.J., Ghaffar, A. (2009) Land cover classification of Islamabad region using Remote Sensing of Landsat Spatio-Temporal images. Proceedings of 1st CIIT science conference BICMAPE-2009 28-29 July CIIT Abbottabad, Pakistan pp 51-52 (Abstract).

Awards/Academic Honors and Key Achievements:

09-10 December 2024, Islamabad Pakistan	Track Chair of Remote Sensing and Geographic Information Science in the 21st International Conference on Frontiers of Information Technology (FIT 2024)
15th July– 13 August 2024	Resource Person of Summer camp on Spatial Data Science: Innovations in Remote Sensing and GIS at the Department of Meteorology, COMSATS University Islamabad

17–25 January 2017 Sponsored by Japan-Asia Youth Exchange Program in Science (SAKURA Exchange Program in Science) to participate jointly organized by Japan Science and Technology Agency (JST) and Kumamoto University, Kumamoto, **Japan**.

2–8 October 2016 Sponsored by Interdisciplinary Center for Scientific Computing (IWR), Heidelberg University, Germany and Ateneo de Manila to participate the summer school on Applied Mathematics and Scientific Computing, Manila, **Philippines**.

2012–2018 Prime Minister’s Fee Reimbursement Scheme Scholarship for PhD in Meteorology from CIIT, Islamabad, **Pakistan**.

2017 Certificate of Appreciation from **Proctorial Board, CUI, Islamabad**.

2016 SPORTS/Merit certificate for participation in inter Department/Inter Campus games at CUI, **Islamabad**.

2013-2019 Research Productivity Award, CIIT, Islamabad, **Pakistan**.

2014 Certificate of Appreciation from **Proctorial Board, CUI, Islamabad**.

2013 Merit Laptop received from Punjab Government, **Pakistan**.

4–6 October 2010 Sponsored by ICIMOD Nepal to participate in the International Symposium Benefiting from Earth Observation Bridging the Data Gap for Adaption to Climate Change in the Hindu Kush-Himalayan Region, Kathmandu, **Nepal**.

2006–2008 Obtained Full Merit Scholarship for the degree of MS Meteorology from CIIT, Islamabad, **Pakistan**.

December 2005 Team of the Month Award at MTBC, Islamabad, **Pakistan**.

December 2005 Certificate of Appreciation from MTBC, Islamabad, **Pakistan**.

August to October 2005 CCNA (Cisco Certified Network Associate) preparation from Emerging System Islamabad, **Pakistan**.

Thesis Evaluation, Scholarship Scrutinizing and Manuscript Reviewer: -

I am a reviewer of the following journals and reviewed various manuscripts for these journals.

- Remote Sensing of Environment (<https://www.sciencedirect.com/journal/remote-sensing-of-environment>)
- Atmospheric Research (<https://www.sciencedirect.com/journal/atmospheric-research>)
- Environmental Monitoring Assessment (<https://link.springer.com/journal/10661>)
- Environmental Earth Sciences (<https://link.springer.com/journal/12665>)
- Geology, Ecology, and Landscapes (<https://www.tandfonline.com/journals/tge120>)
- Geocarto International (<https://www.tandfonline.com/toc/tgei20/current>)
- Geofluids (<https://www.hindawi.com/journals/geofluids/>)
- Journal of Sensors (<https://www.hindawi.com/journals/js/>)
- PeerJ Computer Science (<https://peerj.com/computer-science/>)
- Modeling Earth Systems and Environment (<https://link.springer.com/journal/40808>)
- The Nucleus (<https://www.thenucleuspak.org.pk/>)

Member of Editorial Board of *Journal of Applied and Emerging Sciences*

Performed BS/MSc/MS/MPhil thesis evaluation (as external examiner) for different universities including

- Department of Space Sciences, University of Punjab, Lahore, Pakistan
- Department of Space Science Institute of Space Technology (IST), Islamabad, Pakistan

Member of HEC Accreditation and Inspection team for evaluation of undergraduate and graduate programs

Member of Internal Review Panel for Queen Elizabeth Commonwealth Scholarships through The Association of Commonwealth Universities

BS/MS/PhD Thesis Supervised/Co-Supervised/Supervising: -

Name of Student	Mr. Mohammad Izhar Hussain (CIIT/SP23-PRG-001/ISB)
Degree Title	PhD Remote Sensing and GIS
Semester	Spring 2023– Fall 2025 (<i>In progress</i>)
Thesis Title	Enhancing Agricultural Resilience under Changing Climate Conditions

Name of Student	Ms. Sidra-Tul-Muntaha (CIIT/FA20-PME-002/ISB)
Degree Title	PhD Meteorology (Remote Sensing and GIS)

Semester	Fall 2021– Fall 2024 (<i>In progress</i>)
Thesis Title	Climate Change Impact Assessment using Geospatial Techniques
Name of Student	Ms. Farzana Kiran (CIIT/FA23-RRG-002/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2024– Spring 2025 (<i>In progress</i>)
Thesis Title	Assessment of Biodiversity Hotspots using Remote Sensing and GIS Techniques
Name of Student	Ms. Hafsa Nasreen (CIIT/FA23-RRG-003/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2024– Spring 2025 (<i>In progress</i>)
Thesis Title	Utilization of Geospatial Techniques for Assessing Ecosystem
Name of Student	Mr. Adnan Abbas Shah (CIIT/SP23-RRG-001/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2024– Fall 2024 (<i>In progress</i>)
Thesis Title	Utilization of Geospatial Techniques for Assessing the Agricultural Land Degradation
Name of Student	Ms. Ayesha Kanwal (CIIT/SP23-RRG-003/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2024– Fall 2024 (<i>In progress</i>)
Thesis Title	Modelling and Assessment of Health Impact of Pollen with Changing Climate Variability Over Islamabad
Name of Student	Ms. Ayesha Naz (CIIT/SP23-RRG-004/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2024– Fall 2024 (<i>In progress</i>)
Thesis Title	Detection and Analysis of SMOG and Air Quality Index on Brick Kilns for Central Punjab
Name of Student	Ms. Natasha Neelum (CIIT/FA22-RME-001/ISB)

Degree Title	MS Meteorology
Semester	Fall 2023– Spring 2024 (<i>Completed</i>)
Thesis Title	Impact of Rapid Urbanization on Global Warming and Climate Change
Name of Student	Mr. Muhammad Arif (CIIT/FA22-RRG-006/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2023– Spring 2024 (<i>Completed</i>)
Thesis Title	Impacts of Flooding on Agriculture Production in Balochistan Province
Name of Student	Ms. Madiha Iftikhar Khan (CIIT/SP22-RRG-005/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2023– Spring 2024 (<i>Completed</i>)
Thesis Title	Satellite Based Precipitation Analysis and Modelling
Name of Student	Mr. Muhammad Umair (CIIT/SP21-RRG-009/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2022– Spring 2024 (<i>Completed</i>)
Thesis Title	Groundwater Depletion Estimation and Analysis using GRACE Satellites
Name of Student	Mr. Sheikh Muhammad Usman (CIIT/ FA20-RRG-008/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2021– Spring 2024 (<i>Completed</i>)
Thesis Title	Impact Assessment of Land Use Land Cover Modelling on Ground Water Over Twin (Rawalpindi and Islamabad) cities of Pakistan
Name of Student	Mr. Arif Rasheed (CIIT/SP22-RRG-001/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2023– Fall 2023 (<i>Completed</i>)
Thesis Title	Mapping and Modeling of Traffic Accidents using Geospatial Techniques: The Case Study of M2 Motorway in Pakistan
Name of Student	Ms. Sana Kayani (CIIT/ SP22-RRG-016/ISB)
Degree Title	MS Remote Sensing and GIS

Semester | Spring 2023– Fall 2023 (*Completed*)
Thesis Title | Machine Learning Based Marine Oil Spills Detection using Satellite Remote Sensing Techniques and it's Impacts on Coast, Aquatics and Environment

Name of Student | Mr. Hamad Mehmood (CIIT/FA21-RRG-005/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2022– Fall 2023 (*Completed*)
Thesis Title | Spatiotemporal Analysis of Trace Gases through Statistical Techniques using Sentinel-5P

Name of Student | Mr. Muhammad Abid (CIIT/SP21-RRG-007/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2022– Fall 2023 (*Completed*)
Thesis Title | Monitoring Land Deformation and Subsidence using Synthetic Aperture Radar in Rawalpindi and Islamabad Pakistan

Name of Student | Ms. Ayesha Kanwal (CIIT/SP19-BSO-021/ISB)
Degree Title | BS Biosciences
Semester | Spring 2022– Fall 2022 (*Completed*)
Thesis Title | Impacts of Climate Change on Agriculture Production in Central Punjab

Name of Student | Ms. Farhan Jabeen (CIIT/SP19-BSO-028/ISB)
Degree Title | BS Biosciences
Semester | Spring 2022– Fall 2022 (*Completed*)
Thesis Title | Impacts of Climate Change on Agriculture Production in Northern Punjab

Name of Student | Mr. Aftab Ahmad (CIIT/SP21-RRG-001/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2022– Fall 2022 (*Completed*)
Thesis Title | Spatiotemporal Heatwaves Mapping in Southern Parts of Pakistan using Geospatial Analysis

Name of Student | Ms. Abdul Basit (CIIT/FA20-RRG-010/ISB)
Degree Title | MS Remote Sensing and GIS

Semester | Fall 2021– Fall 2022 (*Completed*)
Thesis Title | Analyzing Address Matching with Geocoding and Similarity Implications for Spatial Analysis

Name of Student | Ms. Nayyara Naeem (CIIT/FA20-RRG-007/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2021– Fall 2022 (*Completed*)
Thesis Title | Sediment Analysis and Impact Assessment over Mangla Watershed

Name of Student | Mr. Muhammad Ozair (CIIT/SP20-RRG-004/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2021– Fall 2021 (*Completed*)
Thesis Title | Oil Spill Detection and Impact Assessment using Synthetic Aperture Radar Techniques

Name of Student | Mr. Usama Ashraf (CIIT/SP20-RRG-010/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2021– Fall 2021 (*Completed*)
Thesis Title | Estimation of Crop Water Requirement in Punjab Through Evapotranspiration with the Help of Geospatial Techniques

Name of Student | Ms. Amatul Baseer (CIIT/FA19-RRG-001/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2020– Spring 2021 (*Completed*)
Thesis Title | Water Resources Monitoring and Modelling in Transboundary Chenab River Basin Using SAR Remote Sensing Techniques

Name of Student | Mr. Tariq ur Rehman (CIIT/SP19-RRG-009/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2020 – Spring 2021 (*Completed*)
Thesis Title | Carbon Emissions Modeling from traffic vehicles using Artificial Neural Networks in urban areas of Pakistan

Name of Student | Ms. Syeda Nadia Kiran (CIIT/FA19-RRG-015/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2020– Spring 2021 (*Completed*)
Thesis Title | Assessing the Impacts of Climate Change on Flooding under CMIP6 Scenarios
in the River Chenab, Pakistan

Name of Student | Mr. Fakhrul Islam (CIIT/FA19-RRG-020/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2020– Spring 2021 (*Completed*)
Thesis Title | Landslide Susceptibility Assessment of Murree Area, Sub Himalayas Using
Geospatial Modelling

Name of Student | Ms. Syeda Sehrish Fatima (CIIT/SP19-RRG-008/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Spring 2020 – Spring 2021 (*Completed*)
Thesis Title | Remote Sensing Based Assessment of Agricultural Droughts in Southern
Pakistan

Name of Student | Mr. Muhammad Arshad (CIIT/FA18-RRG-003/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2019 – Spring 2021 (*Completed*)
Thesis Title | Flood Hazard Risk Mapping and Impact of Urbanization on Basin Hydrology: A
Case Study of Kabul River and Its Watershed

Name of Student | Mr. Muhammad Nawaz (CIIT/SP18-RRG-001/ISB)
Degree Title | MS Remote Sensing and GIS
Semester | Fall 2018 – Spring 2019 (*Completed*)
Thesis Title | Evaluating the Performance of CHIRPS Satellite Based Precipitation Product
for Hydrological Modeling

Name of Student | Mr. Haseen Ullah (CIIT/FA17-RRG-004/ISB)

Degree Title	MS Remote Sensing and GIS
Semester	Spring 2018 – Fall 2018 (<i>Completed</i>)
Thesis Title	Assessing the Impacts of Land Use Land Cover Changes on Surface Runoff of Swat River Basin

Name of Student	Mr. Muhammad Kaleem Ullah (CIIT/FA17-RRG-006/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2018 – Fall 2018 (<i>Completed</i>)
Thesis Title	Evaluation of Multiple Satellite Precipitation Data for Hydrological Modeling over Khyber Pakhtunkhwa, Pakistan

Name of Student	Ms. Saima Naz (FA17-RRG-009/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Spring 2018 – Fall 2018 (<i>Completed</i>)
Thesis Title	Oil Spill Detection and Impact Assessment using Synthetic Aperture Radar

Name of Student	Ms. Wajeeha Niaz (CIIT/FA12-RRG-003/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2013 – Spring 2014 (<i>Completed</i>)
Thesis Title Co-Supervised	Estimation of Evapotranspiration on Satellite Data Over Diverse Land Cover Regions in Pakistan

Name of Student	Mr. Umar Jamil (CIIT/FA12-RRG-006/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2013 – Spring 2014 (<i>Completed</i>)
Thesis Title Co-Supervised	An Assessment of Crop Growth Response to Climate Variations Using Geospatial Techniques

Name of Student	Ms. Sadaf Shaheen (CIIT/FA12-RRG-011/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2013 – Spring 2014 (<i>Completed</i>)

Thesis Title Co-Supervised	Forest Canopy Density Estimation from 1992-2012 Using Geospatial Techniques
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Name of Student	Mr. Iftikhar Ahmad Khan (CIIT/FA10-RRG-002/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2011 – Spring 2012 (<i>Completed</i>)
Thesis Title	Land Use/Land Cover Change Analysis and Erosion Risk Mapping in Muzaffarabad (AJK) using Geospatial Techniques

Name of Student	Mr. Waqas Ahmad Abbasi (CIIT/FA10-RRG-010/ISB)
Degree Title	MS Remote Sensing and GIS
Semester	Fall 2011 – Spring 2012 (<i>Completed</i>)
Thesis Title	Spatiotemporal Urban Growth Assessment and Modeling of Islamabad City

Research Projects:

- Submitted a Research Project as PI under HEC NRPU program on “Oil Spill Detection and Risk Assessment using Satellite Remote Sensing along Gwadar Coast, Balochistan” (13.75 million)
- Completed a Research Project “Spatiotemporal urban growth assessment and impact on the environment” awarded by COMSATS Institute of Information Technology (CIIT), Islamabad (0.2 Million)
- CO-PI of the HEC Research Project “Climatic Reconstruction of Monsoon Paleo-intensity: U-Th Dating of Speleothems from Margalla, Koh-I-Sulaiman, and Salt Range” submitted (7.0 Million)

Administrative Responsibilities/Convener/ Member Committees at CUI: -

From Spring 2024 to date	Convener, Departmental Graduate Admission Committee (DGAC)
From Spring 2023 to date	Member of Campus Security, Health and Safety Committee, CUI, Islamabad
From Fall 2021 to date	Incharge Admission Committee Remote Sensing and GIS, Department of Meteorology, CUI, Islamabad
From Spring 2020 to date	Member Board of Studies (BOS), Department of Meteorology, CUI, Islamabad

From Spring 2020 to date	Member Departmental Advisory Committee (DAC)
From Fall 2019 to date	Incharge Graduate Programs
From Fall 2019 to date	Convener Departmental Academic Review Committee (DARC)
From Fall 2019 to date	Convener Departmental Examination Supporting team
Spring 2018 – Spring 2019	In-Charge Graduate Labs
From Fall 2016 to Fall 2021	Group Leader Departmental Proctorial Board
Fall 2016	Secretary Organization Committee for seminars/workshops on the International GIS day
Fall 2013 to Spring 2019	Convener Departmental Examination Monitoring team
Fall 2015	Secretary Organization Committee for seminars/workshops on the International GIS day
Fall 2014	Secretary Organization Committee for seminars/workshops on the International GIS day
Fall 2013	Secretary Organization Committee for seminars/workshops on the International GIS day
From Fall 2013 to date	Team Lead of Departmental MS and PhD Synopsis finalization
From Fall 2013 to date	Member/Secretary Departmental Admission Committee
From Fall 2013 to date	Departmental representation of CU Online
From Fall 2013 to date	Coordination with External MS and PhD examiners for viva voce

From Fall 2013 to date	Member Departmental Student Affairs
From Fall 2013 to date	In-charge PhD Comprehensive Examinations Conduct Committee
Fall 2013 to Spring 2019	Member Departmental Telescope Committee
Fall 2013 to Spring 2019	Member Remote Sensing and GIS Lab Committee
Fall 2013 to Spring 2019	Member Departmental Academic Review Committee (DARC)
From Fall 2012 to date	In-charge Timetable Committee
From Fall 2012 to date	In-charge Midterm and Terminal Examinations Conduct Committee
From Fall 2012 to date	In-charge MS and PhD Synopsis Finalization Committee
From Fall 2012 to date	In-charge MS and PhD Viva Voce Examination Conduct Committee
From Fall 2012 to date	Member of Curriculum Development and Revision Committee for BS Geo-Informatics
From Fall 2012 to date	Member of Curriculum Development and Revision committee for MS Remote Sensing and GIS
From Spring 2012 to date	Arrange the meetings of Departmental Advisory Committee (DAC) Coordinator of International Workshop on Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region held at Islamabad
From Fall 2011 to date	Departmental Course Coordinator
From Fall 2009 to Fall 2021	Member Departmental Proctorial Board

National and International Training Workshops Attended:

- 12 – 17th August 2024 **Sustainable Water, and Land Use in Arid Regions with RS-GIS Applications based on Chinese Expertise**, Kazakh British Technical University, Almaty, **Kazakhstan**
- 21 – 27 August 2022 **2022 International Geoinformatics Summer School on *Smart Earth***, organized by State key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, **China**
- 12 – 16 July 2021 **2021 International Training Workshop on Earth Observation for Sustainable Development in Developing Countries Online**, Sponsored by Ministry of Science and Technology of the People's Republic of China (MOST), hosted by National Remote Sensing Center of China (NRSCC) and Asia-Oceania Group on Earth Observations (AOGEO), and organized by Aerospace Information Research Institute, Chinese Academy of Sciences (AIRCAS) & International Centre for Integrated Mountain Development (ICIMOD), **Nepal**
- 07 – 09 November 2019 **GNSS observations for accurate positioning and water vapor estimation** jointly organized by Interdisciplinary Research Center, COMSATS University Islamabad (CUI), Islamabad and USAID Pakistan, Islamabad, **Pakistan**
- 05 – 07 November 2018 **International training workshop on Mesoscale Modelling Using Weather Research and Forecasting (WRF) Model**, jointly organized by COMSATS University Islamabad (CUI), Islamabad, Pakistan and Institute of Atmospheric Physics Chinese Academy of Sciences, **China**
- 02 – 04 July 2018 **Training workshop on Geospatial Tools for Multidisciplinary Applications**, jointly organized by COMSATS University Islamabad (CUI), Islamabad, Pakistan and University of Houston (UH), **USA**
- 18 – 31 July 2017 **Remote Sensing and GIS Applications in Flood Management**, jointly organized by UNESCO and National Institute of Information Technology (NUST), Islamabad, **Pakistan**

- 17 – 25 January 2017 **Japan-Asia Youth Exchange Program in Science (SAKURA Exchange Program in Science)**, Jointly organized by Japan Science and Technology Agency (JST) and Kumamoto University, Kumamoto **Japan**
- 02 – 08 October 2016 **Summer school on Applied Mathematics and Scientific Computing**, jointly organized by the Interdisciplinary Center for Scientific Computing (IWR), Heidelberg University, Germany and Ateneo de Manila, Manila, **The Philippines**
- 08 – 10 February 2016 **Training Course on Climate Change** organized by Capital Development Authority (CDA) Training Academy, Islamabad, **Pakistan**
- 15 – 16, December 2014 **Applications of ICTs in Education, Healthcare & Agriculture**, jointly organized by INIT, ISESCO and COMSATS, Islamabad, **Pakistan**
- 19th February 2014 **Hydro Meteorological Modelling and Simulation using GIS and RS Technologies**, Organized by Institute of Geographical Information Systems (IGIS), National Institute of Information Technology (NUST), Islamabad, **Pakistan**
- 20 – 21, January 2014 **International Conference on Asian Monsoon and Climate Change** organized by Potsdam Institute for Climate Impact Research, Higher Education Commission, COMSATS Headquarter, International Center for Climate and Environment Sciences and CIIT, Islamabad **Pakistan**
- 10 – 15, December 2012 **International Training on Flood Risk Mapping Using Geospatial Technologies**, jointly organized by SUPARCO, UNESCO and JICA, Islamabad, **Pakistan**
- November 15, 2012 **One Day Basic Life Support Course**, jointly organized by Child health Advocacy International (CAI) and COMSATS Institute of Information Technology (CIIT), Islamabad, **Pakistan**

- 20 – 23, December 2011 **International Training Workshop for Stakeholders Capacity Building in Flood Warning and Management**, organized by National Institute of Information Technology (NUST), Islamabad, **Pakistan**
- 22 – 24, November 2011 **International Training Workshop on Climate Change and Sustainable Management of Water Resources in the Asia-Pacific Region** organized by DAAD, UNESCO, COMSATS Headquarter, HEC and COMSATS Institute of Information Technology (CIIT), Islamabad, **Pakistan**
- October 10 – November 4, 2011 **First Pre-service Training**, organized by FDA (Faculty Development Academy), COMSATS Institute of Information Technology (CIIT) at COMSATS headquarter, Islamabad, **Pakistan**
- 11 – 15, July 2011 **Analysis of Research Data Using SPSS** organized by COMSATS Institute of Information Technology (CIIT) Islamabad campus, Islamabad, **Pakistan**
- 18 – 22, April 2011 **Remote Sensing based Monitoring and Assessment of Cryosphere–Snow and Glaciers**, jointly organized by Institute of Space Technology (IST) Islamabad and International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal at Islamabad, **Pakistan**
- January 31 – February 02, 2011 **Curriculum Planning & Assessment**, organized by Higher Education Commission (HEC), Islamabad, **Pakistan**
- 26 – 28, July 2010 **Academic Research Writing Skills**, Higher Education Commission (HEC), Islamabad, **Pakistan**
- 18 – 20 August, 2009 **First International Conference on Aerospace Science and Engineer** organized by Institute of Space Technology (IST), Islamabad, **Pakistan**
- 15th August 2005 – 24th October 2005 **CISCO Certified Network Associate (CCNA)** preparation at Emerging Systems, Islamabad **Pakistan**

7 – 11 February, PAFWA MTBC Air Force Complex Islamabad organized by **The ISO 9001: 2005 2000 standard**, two weeks training, Islamabad, **Pakistan**

23 July 2003 **Productivity Tools 5 S & Kaizen Management** organized by National Productivity Organization, Ministry of industries & production Govt. of **Pakistan**

17 April 2003 **Enhancing Human Productivity and Management Skills** organized by National Productivity Organization, Ministry of industries & production Govt. of **Pakistan**

Courses Teaching/Taught:

Sr. No	Course Title and Code	Session	Level
1	Geographic Information System for Health Informatics (HIS622)	Spring-2009	MS Health Informatics
2	Satellite Remote Sensing (MET205)	Fall-2009	BS Physics
3	Satellite Remote Sensing (MET205)	Spring-2010	BS Physics
4	Principles of Geographic Information System (MET652)	Fall-2010	MS Remote Sensing & GIS
5	Spatial Analysis and Modeling (MET655)	Spring-2011	MS Remote Sensing & GIS
6	Satellite Remote Sensing (MET205)	Fall-2011	BS Physics
7	Spatial Analysis and Modeling (MET655)	Spring-2012	MS Remote Sensing & GIS
8	Satellite Remote Sensing (MET205)	Fall-2012	BS Physics
9	Principles of Geographic Information System (MET652)	Fall-2012	MS Remote Sensing & GIS
10	Spatial Analysis and Modeling (MET655)	Spring-2013	MS Remote Sensing & GIS
11	Principles of Remote Sensing (MET651)	Fall-2013	MS Remote Sensing & GIS
12	Satellite Remote Sensing (MET205)	Fall-2013	BS Physics
13	Satellite Remote Sensing (MET205)	Spring-2014	BS Physics
14	Satellite Remote Sensing (MET205)	Fall-2014	BS Physics
15	Spatial Analysis and Modeling (MET655)	Spring-2015	MS Remote Sensing & GIS

16	Satellite Remote Sensing (MET205)	Fall-2015	BS Physics
17	Spatial Analysis and Modeling (MET655)	Fall-2015	MS Remote Sensing & GIS
18	Satellite Remote Sensing (MET205)	Spring-2016	MS Remote Sensing & GIS
19	Spatial Analysis and Modeling (MET655)	Spring-2016	MS Remote Sensing & GIS
20	Spatial Analysis and Modeling (MET655)	Fall-2016	MS Remote Sensing & GIS
21	Spatial Analysis and Modeling (MET655)	Spring-2017	MS Remote Sensing & GIS
22	GIS Customization (MET607)	Fall-2017	MS Remote Sensing & GIS
23	Spatial Analysis and Modeling (MET655)	Spring-2018	MS Remote Sensing & GIS
24	GIS Customization (MET607)	Spring-2018	MS Remote Sensing & GIS
25	Spatial Analysis and Modeling (MET655)	Spring-2018	MS Remote Sensing & GIS
26	Spatial Analysis and Modeling (MET655)	Fall-2018	MS Remote Sensing & GIS
27	GIS Customization (MET607)	Spring-2019	MS Remote Sensing & GIS
28	Spatial Analysis and Modeling (MET655)	Spring-2019	MS Remote Sensing & GIS
29	GIS Customization (MET607)	Fall-2019	MS Remote Sensing & GIS
30	Spatial Analysis and Modeling (MET655)	Fall-2019	MS Remote Sensing & GIS
31	GIS Customization (MET607)	Spring-2020	MS Remote Sensing & GIS
32	Spatial Analysis and Modeling (MET655)	Spring-2020	MS Remote Sensing & GIS
33	GIS Customization (MET607)	Fall-2020	MS Remote Sensing & GIS
34	Spatial Analysis and Modeling (MET655)	Fall-2020	MS Remote Sensing & GIS
35	Spatial Analysis and Modeling (MET655)	Spring-2021	MS Remote Sensing & GIS
36	Advanced Geo-Statistical Analysis (MET735)	Spring-2021	PhD Meteorology (Specialization in Remote Sensing & GIS)
37	Spatial Analysis and Modeling (MET655)	Fall-2021	MS Remote Sensing & GIS
38	GIS Customization (MET607)	Fall-2021	MS Remote Sensing & GIS
39	Spatial Analysis and Modeling (MET655)	Spring-2022	MS Remote Sensing & GIS
40	Spatial Analysis and Modeling (MET655)	Fall-2022	MS Remote Sensing & GIS
41	GIS Customization (MET607)	Fall-2022	MS Remote Sensing & GIS
42	Spatial Analysis and Modeling	Spring-2023	MS Remote Sensing & GIS

43	Geospatial Data Modelling (MET727)	Spring-2023	PhD Remote Sensing & GIS
44	GIS Customization (MET607)	Fall-2023	MS Remote Sensing & GIS
45	Fundamentals of GIS (MET107)	Fall-2023	BS Remote Sensing & GIS
46	GIS Customization (MET607)	Spring-2024	MS Remote Sensing & GIS
47	Digital Image Processing and Analysis (MET654)	Spring-2024	MS Remote Sensing & GIS
48	Fundamentals of GIS (MET107)	Fall-2024	BS Remote Sensing & GIS
49	Digital Image Processing and Analysis (MET654)	Fall-2024	MS Remote Sensing & GIS
50	Geospatial Data Modelling (MET727)	Fall-2024	PhD Remote Sensing & GIS

Software Skills: -

RS and GIS Software(s):

- | | |
|---|---|
| <ul style="list-style-type: none"> ✓ ArcView 3x ✓ ArcGIS Desktop
 ✓ ArcSDE ✓ ArcObjects ✓ ArcIMS ✓ QGIS ✓ MapInfo Professional ✓ LandSerf ✓ GeoDa | <ul style="list-style-type: none"> ✓ ERDAS Imagine ✓ ENVI (Environment for Visualizing Images) ✓ MODIS Snow Tool (ICIMOD) ✓ MODIS Reprojection Tool (MRT) ✓ ILWIS ✓ Google Earth ✓ AutoCAD ✓ SNAP |
|---|---|

Programming Languages:

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> ✓ Python ✓ C/C++ ✓ PHP ✓ COBOL ✓ Assembly | <ul style="list-style-type: none"> ✓ MATLAB ✓ Visual Basic (VB) ✓ HTML/XML ✓ Microsoft QuickBASIC ✓ R | <ul style="list-style-type: none"> ✓ Google Earth Engine ✓ Visual C ✓ FORTRAN ✓ GW Basic ✓ Java |
|---|--|--|

Statistical Software(s):

- | | | |
|-----------|-----------|----------|
| ✓ SPSS | ✓ Minitab | ✓ XLSTAT |
| ✓ EasyFit | | |

Models/Modelling:

- | | |
|---|--|
| ✓ Hydrologic Modeling System (HEC-HMS) Model | ✓ Soil Water Assessment Tool (SWAT) Model |
| ✓ Integrated Flood Analysis System (IFAS) Model | ✓ Cartographic/Index/Binary/Process/Regression/Artificial Neural Network (ANN) modelling |
| ✓ Hydrologic Engineering Center's River Analysis System (HEC-RAS) | |

DataBase Management System (DBMS):

- | | |
|--|-------------------------------------|
| ✓ File geodatabases (ArcGIS/ArcCatalog) | ✓ Personal geodatabases (MS Access) |
| ✓ Enterprise geodatabases (Oracle/Microsoft SQL Serve/MySQL) | |

Designing and Drafting Tools:

- | | | |
|---|--|-----------------------------------|
| ✓ Adobe Photoshop | ✓ Adobe Dreamweaver/Macromedia Dreamweaver | ✓ Adobe Flash/Macromedia Flash Mx |
| ✓ Adobe Fireworks/Macromedia Fireworks | ✓ CorelDRAW | ✓ QuarkXPress |
| ✓ Microsoft Office (Visio, Project, Word, Front Page, Publisher, Power Point & Excel) | | |

Operating System Environments:

- | | | |
|--|-------------------------------------|------------------------|
| ✓ Microsoft Disk Operating System (MS DOS) | ✓ Microsoft Windows 3.1 | ✓ Microsoft Windows 95 |
| ✓ Microsoft Windows 98 | ✓ Microsoft Windows ME | ✓ Microsoft Windows NT |
| ✓ Microsoft Windows XP | ✓ Microsoft Windows Vista | ✓ Microsoft Windows 7 |
| ✓ Microsoft Windows 8 | ✓ Microsoft Windows 10 | ✓ Red Hat Linux |
| ✓ Ubuntu Linux | ✓ Macintosh Operating System (mcOS) | |