

STANDARD TEMPLATE OF FACULTY PROFILE FOR UPLOADING OF UNIVERSITY WEBSITE						
Title	Dr	First Name	Deeksha	Last Name	Katyal	
Designation	Assistant Professor					
School/ Dept. Name	University School of Environment Management					
Address:	A-2/152, Sector 3, Rohini , Delhi -110085					
Phone No.	Office	011-25302370				
	Residence	(Optional)				
	Mobile	(Optional)				
Email	1. deekshakatyal@gmail.com			2. <a href="mailto:deekshakatyal@ipu.ac.in">deekshakatyal@ipu.ac.in</a>		
Web Page (If any)						
Subject Taught	<p>Currently , I am teaching following subjects :</p> <p><u>Doctoral course work</u> : 1)Advanced analytical techniques &amp; Instrumentation</p> <p><u>Masters</u> :a) Environmental Statistics(Theory) b)Environmental Statistics and Computer application lab (Practical) c) Environmental Instrumentation (Theory) d) Environmental instrumentation Lab( Practical/ Shared )</p> <p>Besides this , I have also taught the following subjects to Master's students :</p> <p>1)Environmental modeling 2) Research Methodology 3) Air pollution and control 4) Environmental sampling and data analysis 5) Wastewater treatment 6) Analytical Instrumentation 7) Statistical analysis and computer based data handling</p>					
Areas of Interest/ Specialization	Water quality risk and vulnerability assessment , Index and vulnerability mapping, Health risk assessment , Leaching behavior of contaminants in water, Nanoparticles fate and sorption studies , Micro plastics , Synthesis of green materials (including membranes ) and Radioactivity removal efficiency from water using nanotubes and RO membranes, Environmental statistics and modelling , Analytical Instrumentation .					
Experience (In Years)	Total	21				
	Industry	1				
	Teaching	15				
	Research	5				

Educational Qualifications	UG	Bachelor of Applied Sciences in Instrumentation , Delhi University
	PG	Master of Instrumentation in Commercial methods of Industrial Analysis(M.I.C.A) , Jiwaji University
	Doctorate	Doctorate of Philosophy, Delhi College of Engineering , Delhi University
	Any Other	P.G. Diploma in Biochemical Technology , Delhi University
Research Publications in Journals (last 5 years)	<ul style="list-style-type: none"> <li>• Nangia, S., <b>Katyal, D.</b>, Warkar, S. (2021). Kinetics, absorption and diffusion mechanism of crosslinked Chitosan hydrogels. <i>Indian journal of Engineering and Material sciences.</i> 28, 374-384.</li> <li>• Kumar, V., <b>Katyal, D.</b>, Siddha, S. (2020). Removal of Heavy metals and Radionuclides from water using Nanomaterials: Current Scenario and Future Prospects. <i>Environmental Science and pollution Research.</i> 27, 41199-41224, DOI: 10.1007/s11356-020-10348-4.</li> <li>• Kumar, V., <b>Katyal, D.</b>, Siddha, S. (2020). Comparative evaluation of the radioactivity removal efficiency of different commercially available reverse osmosis membranes. <i>Radiation Protection and Environment.</i> 43(2), 100-107. DOI: 10.4103/rpe.RPE_20_20.</li> <li>• Tomer, T., <b>Katyal, D.</b>, Joshi, V. (2019). Sensitivity analysis of groundwater vulnerability using DRASTIC method: A case study of National Capital Territory, Delhi, India. <i>Groundwater for Sustainable Development.</i> 9, 100271. DOI : 10.1016/j.gsd.2019.100271.</li> <li>• Nangia, S., <b>Katyal, D.</b>, Warkar, S. (2018). A review on Environmental applications of Chitosan biopolymeric hydrogel based composites. <i>Journal of Macromolecular Science (Part A).</i> 55(11/12), 747-763. DOI: <a href="https://doi.org/10.1080/10601325.2018.1526041">10.1080/10601325.2018.1526041</a>.</li> <li>• Bansal, S., Garg, J.K., Sharma, C.S., <b>Katyal, D.</b> (2018). Spatial methane emission modeling from Wetlands using Geospatial tools. <i>International journal of Remote Sensing.</i> 29(18), 5907-5933.</li> <li>• Bansal, S., <b>Katyal, D.</b>, Saluja, R., Chakraborty, M., Garg, J.K. (2018). Remotely Sensed MODIS wetland components for assessing the variability of methane emissions in Indian tropical/ subtropical wetlands. <i>International Journal of Applied Earth observation and Geoinformation.</i> 64, 156-170 .</li> <li>• Bansal, S., <b>Katyal, D.</b>, Garg, J.K. (2017). A novel strategy for wetland area extraction using multispectral MODIS data. <i>Remote Sensing of Environment.</i> 200, 183-205.</li> <li>• Hedayati, M., Sharma, P., <b>Katyal, D.</b>, Fagerlund, F. (2017). Transport and retention of carbon-based engineered and natural nanoparticles through saturated porous media. <i>Journal of Nanoparticle Research.</i> Springer publication, 18(3), 1-11.</li> <li>• Tomer, T., <b>Katyal, D.</b>, Joshi, V. (2017). Hydrochemical characterization and evaluation of groundwater quality of Delhi region. <i>Journal of water resources engineering and management.</i> 3(2), 32-41.</li> <li>• Natraj, V.M., <b>Katyal, D.</b>, Gorntiwar, S. (2016). Study Of Groundwater Contamination due to Agricultural Activity Under Pravara Left Bank Canal, Maharashtra. <i>International Journal of Advance research and Innovative ideas in education.</i> 2 (5), 491-500.</li> </ul>	

	<ul style="list-style-type: none"> <li>• Rizvi, N., <b>Katyal, D.</b>, Joshi, V. (2016). Seasonal and Spatial variation in the water quality of River Hindon at NCR, Delhi. <i>International journal of Current Research</i>. 8(5), 31282-31289.</li> <li>• Natraj, V.M. &amp; <b>Katyal, D.</b> (2016). Assessment of Aquifer Parameters under Pravara Canal Precinct Using Pumping and Recovery Test Data. <i>Universal Journal of Environmental Research and Technology</i>. 6,(1), 8-18.</li> </ul>
Papers Published in Conference Proceedings (last 5 Years)	<ul style="list-style-type: none"> <li>• Nishita Narwal, Deeksha Katyal, 2021, ‘Green synthesis of iron oxide nanoparticles using bottom ash residues from thermal power plant and evaluating their application in leachate control near waste dumping sites and landfills.’ for the theme ‘Emerging trends in India &amp; Europe’ at Young Researchers International Conference on ‘Global Dynamics and Emerging Trends : India and Europe’ organized by Jean Monet module and Centre for European studies, JNU &amp; Directorate , International affairs , GGSIPU , March 4-5, 2021.</li> <li>• Sakshi Nangia, Deeksha Katyal, Sudhir warkar , ‘Chitin based sustainable products for environmental applications in Europe and India’ for the theme ‘Europe as a normative factor’ at Young Researchers International Conference on ‘Global Dynamics and Emerging Trends : India and Europe ‘organized by Jean Monet module and Centre for European studies, JNU &amp; Directorate , International affairs March 4-5, 2021.</li> <li>• Aastha Malik, <b>Deeksha Katyal</b>, 2020, ‘Mapping of heavy metal contamination in groundwater of some villages in Gurugram, Haryana.’ Published in the proceedings of 3<sup>rd</sup> National level Student technical paper and Model contest (TECHNOVATION -2020) December 12-13, 2020, ISBN: 978-93-5406-327-5.</li> <li>• Rizvi, N., Katyal, D. and Joshi, V. (2019). Assessment of water quality status of Hindon River in National Capital Region (NCR), India using water quality index “International Conference on Knowledge and Policy for Sustainable Development: Global lessons and local challenges”, September 25-27, University School of Environment Management, Guru Gobind Singh Indraprastha University, New Delhi, India.</li> <li>• Nangia, S., Katyal, D., Warkar, S.G. 2019 Sustainable Chitosan based hydrogel composites for dye removal and fertilizer carrier applications [abstract]. Submitted for “The Meeting of Asia and Pacific Women in Science and Technology, 2019 and KWSE/ APNN International Young Women Science Camp” August 7-9, Ewha Womans University, Seoul, Korea.</li> <li>• Rizvi, N., Katyal, D. and Joshi, V. (2019). Water quality assessment of River Hindon in National Capital Region (NCR), India using Index mapping at “The meeting of Asia and Pacific Women in Science and Technology, 2019 and KWSE/APNN International Young Women Science Camp”, August 7-9, Ewha Women University, Seoul, Korea.</li> <li>• Katyal, D., Nangia, S., Warkar, S.G. 2019; Innovative and Sustainable Chitosan based materials for Environmental, Biomedical and Industrial applications [. In: Proceedings of “National Seminar on Climate Change, Biodiversity and Urban Environment: Current trends and challenges in the Conservation of Urban and Peri- urban Biodiversity”; April 26, University School of Environment Management, Guru Gobind Singh Indraprastha University.</li> <li>• Katyal, D., Nangia, S., Warkar, S.G. Environmental, Biomedical and Industrial Applications of Chitosan based Hydrogel Composites [abstract].</li> </ul>

<ul style="list-style-type: none"> <li>•</li> </ul>	<p>In: Proceedings of “1<sup>st</sup> International Conference on Crystal Engineering: From Molecule to Crystal”; March 30-31, 2019; Deptt. Of Chemistry, National Institute of Technology, Raipur, India; Paper ID-CEPMC19/EC/1004. Abstract page no. 67.</p> <ul style="list-style-type: none"> <li>• <b>Deeksha Katyal</b>, Tapasya Tomer and Varun Joshi, <b>2018</b>. “Assessment and comparison of vulnerability maps of Delhi using DRASTIC and GOD models” presented at Economy, Sustainable development and Engineering International conference, 25<sup>th</sup> June 2018, Queen Margaret University, Scotland .</li> </ul>			
<p>Books Authored/ Book Volume Chapters</p>	<p><b>Books:</b></p> <ul style="list-style-type: none"> <li>• Deeksha Katyal, " Groundwater quality assessment by index mapping: Elements of groundwater quality determination, its interpretation and characterization by index mapping" LAP LAMBERT academic publishing, Germany, 2012, ISBN-13: 9783847322566.</li> <li>• Elina Sarkar, Deeksha Katyal, "Analysis and quality assessment of roadside dust: A case study of Jharia Coalfield, Dhanbad district, Jharkhand " Lap Lambert Academic publishing, 2011, ISBN- 13: 9783846511770</li> <li>• Chanchal Bhatted, Navin chopra, Deeksha Katyal, " Determination and evaluation of Carbon footprint applied to It industry: Assessment of IT companies towards our Environment stability and sustainability analysis" LAP LAMBERT Academic publishing, Germany, 2011, ISBN-13: 9783846514702.</li> <li>• Archana data, Deeksha Katyal, " Carbon mitigation through scientific wastewater management: Case study of potential carbon mitigation and income to developing countries by methane recovery in sewage treatment plants" LAP LAMBERT Academic publishing, Germany,2011, ISBN-13: 978- 3846528549</li> <li>• Ridhi Saluja, Deeksha Katyal, " Environmental implications and assessment of public transport system- Delhi: mode choice analysis and carbon footprint as a tool" LAP LAMBERT Academic publishing, Germany, 2011, ISBN-13: 978-3845425214</li> </ul> <p><b>Book Chapters:</b></p> <ul style="list-style-type: none"> <li>• Deeksha Katyal ,Water quality indices based on physical and chemical parameters –A comparative review, Edited book: New Challenges- New Opportunities in Environment, Macmilan Publishers, 2012.</li> </ul>			
<p>No. Of Conferences</p>	<p>National</p>	<p>Attended</p>		<p>Organised</p>
		<p>13</p>		<p>6</p>
	<p>International</p>	<p>5</p>		<p>3</p>
<p>Research Guidance</p>	<p>Awarded</p>	<p>PG</p>	<p>M.Phill</p>	<p>Doctorate</p>
		<p>46</p>		<p>4</p>
	<p>Undergoing</p>	<p>3</p>		<p>4</p>

Research Projects	Completed	<ul style="list-style-type: none"> <li>• Title of the project: ‘Evaluation of health risks due to consumption of contaminated waters of Panipat district , Haryana through GIS and USEPA’s Health risk assessment model’2021.</li> <li>• Title of the project: “Fabrication and swelling studies of Biopolymeric hybrid Hydrogel for its use as Controlled Release Fertilizer” (2020). The project was funded by Faculty Research Grant Scheme, GGSIPU.</li> <li>• Title of the project: “Vulnerability Mapping and Health Risk Assessment based on groundwater contamination at Manesar Industrial Area, Gurugram.” (2019). The project has been funded by Faculty Research Grant Scheme, GGSIPU.</li> <li>• Title of the project: “Synthesis, Characterization and Assessment of Chitosan/Morenga Oleifera Hydrogel composites for Anionic and Cationic dye removal” (2018).The project was funded by Faculty Research Grant Scheme , GGSIPU</li> <li>• Title of the project: “Comparison of groundwater vulnerability indices using Multivariate analysis technique in Delhi NCR region” (2017). The project was funded by Faculty Research Grant Scheme, GGSIPU.</li> <li>• Title of the project: “River water quality assessment with the use of index mapping in Delhi, NCR” (2016). The project was funded by Faculty Research Grant Scheme, GGSIPU for 2 lakhs.</li> <li>• Title of the project: “Seasonal variation in the water quality of Hindon , NCR Delhi. This was a Minor project of UGC for an year (2016)</li> </ul>
	Undergoing	-----
Awards & Distinctions	<p><b>Awards Received:</b></p> <ul style="list-style-type: none"> <li>• Received the ‘Certificate of Appreciation’ by Indraprastha University Internal Quality Assurance Cell (IIQAC) for various recognitions and awards received for contribution in education, 30<sup>th</sup> December 2021.</li> <li>• Have been awarded the “Aqua Foundation Excellence Award” in the category “Women in water’ for generating awareness on water quality assessment and Mapping, 29<sup>th</sup> October, 2020.</li> <li>• Received “ Service Excellence Award “ From Rotary Club of Capital City New Delhi for contribution to society through academics and teaching 22<sup>nd</sup> Sepetember 2019.</li> <li>• Have been awarded “Outstanding women in science” by Venus Women International Board for contribution in teaching on 3<sup>rd</sup> March, 2018.</li> </ul> <p>Have been awarded the ‘Namaste’ consortium grant by Erasmus Mundus. NAMASTE i.e. Networking &amp; Mobility Actions for Sustainable Technology and Environment in India grant under the aegis of Erasmus Mundus Action 2 by the European Community Mobility Programme. The program entitled a research stay <b>and teaching</b> under academic exchange at Uppsala University, Sweden in 2014.</p> <p><b>Academic distinctions :</b></p> <ul style="list-style-type: none"> <li>• <b>Met Hon’ble Prime Minister, Shri Narendra Modi</b> on 1<sup>st</sup> July, 2015 for my</li> </ul>	

recommendations given at Mygov.in for my the evaluation and mapping strategy provided for River Ganga. My recommendations were amongst the 15 selected from numerous suggestions given at the portal and were further suggested to respective ministries for implementation and execution.

- Participated in the talk with the former Union Minister of Environment, Forest and Climate Change, **Mr Prakash Javadekar**, regarding the **Climate Change issues to be addressed in COP21** agreement in Paris conducted by Ministry of Environment, Forest and Climate Change on 26<sup>th</sup> October, 2015 .
- My name appeared in ‘**Mann ki Baat**’ (a radio program hosted by Prime Minister Narendra Modi) relayed on 28<sup>th</sup> May , 2017.
- Hired as **Subject Expert** by EdCIL India, National Innovation Foundation (DST ,India) and CPCB in various capacities.
- **Member of the Bureau of Indian Standards (BIS) committee** for drafting “Guidelines for Environmental Impact Assessment (EIA) of River Valley Projects”, “Guidelines for Assessment of the Environmental Health Impacts of River Valley Projects and Remote Sensing & GIS as relevant to EIA and EMP”. This committee works in the core area of “Standardization in the field of Environmental assessment, evaluation and management relevant to Water Resources Project”, 2019.
- **Executive Board Member** of Wise (Women in Science and Engineering), India since 2018. Wise (India) also facilitated 3 of my women students attend ‘The Meeting of Asia and Pacific Women in Science and Technology ‘and KWSE/ APNN International Young Women Science Camp’ at Ewha Womens University, Seoul, Korea in physical mode in 2019 and in virtual mode in 2021.
- Hired as **Subject expert for development and review of Personnel certification Scheme** by Institute of Personnel Certifications.

#### **E-module preparation:**

I have designed Modules and Lectures for e-PG Pathshala which has been implemented by UGC under the initiative of ICT Learning sponsored by MHRD. The modules are available online for PG Courses of Environmental Science. The 3 designed modules individually have 4 quadrants respectively for the course of Water Resources and Management. The modules are :

- A) Module 28: Reservoir Sizing  
Link for the module video: <https://youtu.be/6iHnJ8M0a1w>
- B) Module 29: Reservoir regulation  
Link for the module video: <https://youtu.be/iZEoJAJIPIY>
- C) Module 6: Processing of Hydrometer Data  
Link for the module video: <https://youtu.be/pGbN1pguG1Q>

#### **e-Gyankosh modules for IGNOU :**

I have also designed 3 units for **e-Gyankosh** of Indira Gandhi National Open University (IGNOU ) , Self-Learning Material (SLM), for The School of Interdisciplinary and Trans-disciplinary Studies , M.Sc (Environmental Science Program )The course details are as follows:

- 1) MEV- 012 EARTH PROCESSES; BLOCK 2- CLIMATOLOGY AND METEOROLOGY; Unit 8: Hydrometeorology and Climate :  
Link : <http://egyankosh.ac.in/handle/123456789/79922>
- 2) MEVE-015 DISASTER MANAGEMENT; BLOCK 2- RISK ASSESSMENT AND VULNERABILITY; Unit 6: Risk and Vulnerability Assessment for Geological Hazards  
Link : <http://egyankosh.ac.in/handle/123456789/79973>
- 3) MEVE-017 ENVIRONMENT AND SOCIETY; BLOCK 3 - ENVIRONMENT AND SOCIAL JUSTICE; Unit 10: Historical and Social Perspectives in environmental problems.  
Link : <http://egyankosh.ac.in/handle/123456789/84467>

	<p>These courses are available freely for students across disciplines thus reaching out to those who wish to acquire knowledge regarding the same.</p> <p>Besides this , I have also been a Member of Curriculum Committee to draft a new course on Agriculture ,'Krishi: Production, Processing and Marketing' at Senior Secondary Level . This has been drafted by National Institute of Open Schooling (NIOS), which is an autonomous organization under ministry of education, GOI .</p>
Administrative Assignments Handled	<p>Currently I have following administrative roles:</p> <ul style="list-style-type: none"> <li>• The placement coordinator of USEM</li> <li>• USEM coordinator for Cloud Based Learning Management System (LMS) on MOODLE.</li> <li>• USEM coordinator for Faculty Feedback Systems .</li> <li>• Coordinator of Heritage Society of the University which organises SPICMACAY events.</li> </ul> <p>Earlier, I have held the position of Associate Director of International Affairs and Ph.D Coordinator of USEM .</p>
Association with Professional Bodies	<ul style="list-style-type: none"> <li>• Executive Board Member of WiSE (India)</li> <li>• Member of International Water Association</li> <li>• Erasmus Mundus Alumni</li> </ul>
Any Other Achievements	<p><b>Lectures delivered as Invited speaker and various outreach activities (In last four years )</b></p> <ul style="list-style-type: none"> <li>• Delivered a lecture on ‘Progression of innovative technologies in agricultural applications ‘ at Shastri Mapping and Matching interest workshop on ‘Crop science – Crop improvement , Crop protection , Soil wealth &amp; Water technology’ organized by Shastri- Indo Canadian institute on 18<sup>th</sup> April , 2022.</li> <li>• Delivered a lecture on ‘Role of geospatial technology in enhancing efficacy of health risk assessment related to water contamination’ at International Training Workshop on ‘Use of Analytical and modelling tools tailored to countries needs’ organized by NAM countries S&amp;T Centre &amp; Academy of Science Research &amp;Technology (ASRT,Egypt) on 6<sup>th</sup> -7<sup>th</sup> April , 2022.</li> <li>• Delivered two lectures/outreach activity on ‘Role of statistics education in environmental sampling and analysis ‘ and “Index mapping and vulnerability assessment for classification of zones in terms of water quality ‘ at Green Skill development program sponsored by ENVIS Cell, MOEFCC, GOI, on ‘Pollution monitors: Air and Water’ at JNU, Delhi on 21<sup>st</sup> March and 8<sup>th</sup> April, 2022.</li> <li>• Delivered a lecture on “ Exploring new dimensions and vulnerability mapping from the perspective of Real Estate’ at the training program on ‘Water and waste management and aspect of Water auditing’ organized by National Productivity Council for Brookfield Properties on 4<sup>th</sup> October , 2021.</li> <li>• Delivered a lecture on “ An insight into analytical procedures available for water analysis’ at “ Skill development Certificate course on Analysis of water Pollutants using Chemical and Analytical methods’ organized by Rajdhani College , DU on 28<sup>th</sup> June , 2021.</li> </ul>

- Delivered a lecture on ‘Water saved is Water conserved’ at the at Neighborhood Youth Parliament of Nehru Yuva Kendra , West Delhi on the topic” Rain water conservation and harvesting ‘ on 30<sup>th</sup> March , 2021.
- Delivered a lecture on “Analyzing the role of nano particles in water treatment and purification” at the Continuing Education Program (CEP) titled ‘New frontiers in nanomaterial research’ at Institute of Nuclear medicine and Allied sciences (INMAS),DRDO on 12<sup>th</sup> March , 2021.
- Delivered a lecture as a resource person on the topic “New dimensions exploration in water quality index and vulnerability mapping” in a state level workshop on “Catch the rain :When it falls , where it falls’ conducted by Nehru Yuva Kendra Sangathan, Ministry of Youth affairs, Govt of India in collaboration with Ministry of Jal Shakti on 3<sup>rd</sup> March , 2021.
- Delivered a keynote lecture on “Exploring new dimensions in water quality index and vulnerability mapping” in a Webinar titled “ Climate Change , Risk resilience and Livelihood development in Contemporary world “ at UPES, Dehradun on 14<sup>th</sup> September , 2020.
- . Delivered a lecture on “ Water quality assessment and monitoring using index mapping” at a Conference on Ecosystem Health and Fisheries of Indian Inland Waters: Multiple Stressors, Management & Conservation at Pantnagar, Uttarakhand, 18<sup>th</sup> February , 2020.
- . Delivered a lecture on “Evaluating the engagement of Educational institutions in alleviating air pollution” at an International workshop on Air pollution and public health: Challenges and Interventions organized by Centre for Science and Technology of the Non-Aligned and other developing countries , 6<sup>th</sup> February , 2020.
- . Delivered a lecture on “Role of Educational Institutions in Water resources Management” at a Training course on “Integrated Water Resources Management” at Water resources Department, Government of Madhya Pradesh, Bhopal, 24<sup>th</sup> July , 2019.
- . A lecture on “ Carbon Footprint : Embracing the concept” organized by Department of Chemistry and Environmental Studies, Bhaskaracharya College of Applied sciences, University of Delhi on October 23<sup>rd</sup> , 2018.
- . A talk on “Be a Leader: Celebrate, take action and transform women’s live everywhere” at Wipro Pvt Ltd , Sarita Vihar on 1<sup>st</sup> March , 2018