


# Faculty Profile: For University Website

Department of Water Engineering and Management

<b>Name:</b>	Dr. Ajai Singh	
<b>Designation:</b>	Professor	
<b>Additional role/ responsibility:</b>	<p><b>Dean Students Welfare</b> of Central University of Jharkhand, Ranchi, Jharkhand from 29.03.2016 to 13.12.2017.</p> <p><b>Chief Proctor</b> of Central University of Jharkhand, Ranchi, Jharkhand from 2015 to 13.12.2017.</p> <p><b>Head</b> of Department of Water Engineering and Management, Central University of Jharkhand, Ranchi, Jharkhand from 2013 to 2018.</p> <p><b>Coordinator</b>, University Placement Cell (2015-2019).</p> <p><b>Head (I/C)</b> Department of Transport Science and Technology, continuing</p>	
<b>Educational Qualification:</b>	<ul style="list-style-type: none"> <li>• <b>Doctor of Philosophy</b>, 2011, Soil and Water Conservation Engineering, Sam Higginbottom Institute of Agriculture, Sciences and Technology, Allahabad</li> <li>• <b>Master of Technology</b>, 1997, Irrigation and Drainage Engineering, G. B. Pant University of Agriculture and Technology, Pantnagar, India</li> <li>• <b>Bachelor of Technology</b>, 1995, Agricultural Engineering, Allahabad Agricultural Institute (University of Allahabad), Allahabad, India.</li> </ul>	
<b>Awards/ recognition:</b>	<ul style="list-style-type: none"> <li>• Conferred Distinguished Services Certificate (2012) by Indian Society of Agricultural Engineers, New Delhi.</li> <li>• Fellow of The Institution of Engineers (India) F-119631-2</li> <li>• Editor, American Journal of Environmental Sciences, Bi-Monthly, ISSN: 1553-345X (Print), ISSN: 1558-3910 (Online)</li> <li>• Member of Editorial Board of Sustainable Agricultural Research, ISSN 1927-050X, Canadian Center of Science and Education.</li> <li>• Member of Editorial Board of Advances in</li> </ul>	

	<p>Water Resource and Protection (ISSN Print: 2327-7319)</p> <ul style="list-style-type: none"> <li>• Associate Editor. International Journal of Hydrology. MedCrave Group, OK, ISSN: 2576-4454</li> <li>• Editor in chief, Journal of Water Engineering and Management, International peer reviewed journal, ISSN:2582-6298</li> </ul>	
<b>Area of Interest:</b>	<ul style="list-style-type: none"> <li>• Runoff production mechanism</li> <li>• Hydrological investigation of dam and reservoir</li> <li>• Physically-based, distributed watershed modeling</li> <li>• Soft Computing</li> <li>• Design of Micro Irrigation System</li> <li>• Groundwater Hydrology</li> <li>• Environmental and Social Impact Assessment</li> </ul>	
<b>Courses Taught:</b>	<ul style="list-style-type: none"> <li>• Watershed Management</li> <li>• Microirrigation</li> <li>• Numerical Methods</li> <li>• Advance Hydrology</li> <li>• Groundwater Hydrology</li> <li>• Environmental and Social Impact Assessment</li> <li>• Water Law and Policy</li> <li>• Research Methodology and IPR</li> </ul>	
<b>Contact:</b>	0091 8969740238 (10 am to 5 pm IST)	
<b>Email:</b>	ajai.singh@cuja.ac.in	
<b>International visit</b>	<ul style="list-style-type: none"> <li>• Visited China as a Member of Delegation of Central University of Jharkhand in 2016</li> <li>• Participated in World Irrigation Forum Meeting organized by International Commission on Irrigation &amp; Drainage at Chiang Mai, Thailand during November 6-8, 2016</li> <li>• Attended a workshop on catchment solution May 8-10, 2019 at University of Warwick under UK-India Water Centre.</li> </ul>	
<p><b>Brief introduction</b>  Prof. Ajai Singh has a teaching and research experience of around 24 years in various capacities at different location. Prof. Singh has made immense contributions in the areas of irrigation water policy, modelling of hydrological processes, water allocation model, urban drainage design, microirrigation and groundwater hydrology. He has also carried out consultancy work on social</p>		

impact assessment of 21 infrastructural project and evaluation of detail project report of check dam and weir funded by Government of Jharkhand. He provides consultancy on impact of any developmental activity on water resources availability, climate change impact on water resources, climate resilient agriculture, vetting of design of hydraulic structures and preparation of policy documents. He has published many research papers, written and edited books and is the recipient of Distinguished Services Certificate (2012) conferred by ISAE, India. He is the Editor-in-Chief of Journal of Water Engineering and Management (International peer reviewed journal). He has been Dean Student's Welfare and Chief Proctor and demonstrated his leadership quality. His research outcomes are quite useful for the water resources planners and policy makers. Teaching is his passion. He is a confident, optimistic and self-disciplined person. He is committed to the cause and always strives for perfection.

<p><b>Professional Experience</b></p>	<ul style="list-style-type: none"> <li>• Professor in Department of Water Engineering and Management at Central University of Jharkhand, Ranchi, Jharkhand (June, 2016 to till date).</li> <li>• Associate Professor in Department of Water Engineering and Management at Central University of Jharkhand, Ranchi, Jharkhand (June 2013- June, 2016).</li> <li>• Assistant Professor in Soil and Water Conservation in Uttar Banga Krishi Vishwavidyalaya, Coochbehar, West Bengal. Nodal Officer of Integrated AgroMet Advisory Services, AMFU, Majhian (January, 2002 - June, 2013).</li> <li>• Jr. Hydrologist in Action for Food Production, New Delhi (2001).</li> <li>• Junior Project Officer in Plasticulture Development Centre, Agriculture and Food Engineering Department, IIT, Kharagpur (1997-2001).</li> </ul>
<p><b>Collaboration:</b></p>	<p>Being a Head of Department of Water Engineering and Management, he was instrumental in finalizing the MoU between Central University of Jharkhand and M/S C2S2 Pvt. Ltd, New Delhi and M/S Eco Water Solutions Technologies Pvt. Ltd.</p> <p>During International conference, collaboration was forged with NABARD, M/S Luritech Systems, New Delhi and many companies.</p>

<b>Articles Published/ Accepted:</b>	<b>Research publications</b> <ol style="list-style-type: none"> <li>1. Singh Ajai, R.P. Singh, P. S. Mahar and K. K. Singh. 2000. Optimal design of tapered microirrigation submain manifolds. American Society of Civil Engineers, Jr. of Irrigation and Drainage Engineering, 126(6), pp. 371-374.</li> <li>2. Tiwari, K. N., Ajai Singh, P. K. Mal and A. Pandey. 2001. Effect of crop geometry on yield and economics of okra (<i>Abelmoschus exculentus</i> (L.) Moench) under drip irrigation. Jr. of the Institution of Engineers, Division of Agricultural Engineering, India, 82, 9-12</li> <li>3. Tiwari, K. N., Ajai Singh, P. K. Mal. 2003. Effect of drip irrigation on yield of cabbage (<i>Brassica oleracea</i> L. var. capitata) under mulch and non-mulch conditions. Jr. of Agricultural Water Management, The Netherlands, 58, pp. 19-28.</li> <li>4. Singh, Ajai. 2007. Yield response of drip irrigated tomato to different levels of irrigation. Jr. of Interacademia, 11(2), pp. 200-207.</li> <li>5. Singh Ajai, 2007. Economic feasibility of drip irrigated tomato crop under rainfed condition. Agricultural Engineering Today, 31, pp.1-5.</li> <li>6. Singh Ajai. 2008. Economic feasibility of growing capsicum crop under drip irrigation in West Bengal, India. Jr. of Irrigation Drainage System, Springer Science, 22, pp.179-188.</li> <li>7. Singh Ajai, 2008. Short duration rainfall analysis for effective crop planning in rainfed agriculture. Jr. of Interacademia, 12(4), pp. 469-477.</li> <li>8. Ajai Singh, Mohd. Imtiyaz, R. K. Isaac, D. M. Denis. 2011. Application of multilayer perceptron (MLP) artificial neural network model in simulating rainfall-runoff processes. Jr. of Interacademia, 15(2), 213-221.</li> <li>9. Ajai Singh, A.C. Pandey, V.K. Pandey, S.S. Kumar. 2012. Probability analysis of rainfall for crop planning in Dakshin Dinajpur, West Bengal, India. Eco. Env. &amp; Cons. 18 (1), pp. 61-64.</li> <li>10. Ajai Singh, Mohd. Imtiyaz, R. K. Isaac, D. M. Denis. 2012. Hydrological Process Modelling using RBNN - A Neural Network Computing Technique. Journal of Agricultural Engineering, 49(2), pp. 27-32.</li> <li>11. Ajai Singh, V. K. Jain. 2012. Modeling Daily Evaporation Using Multilayer Perceptron Artificial Neural Network Algorithm. Journal of Interacademia, 16(3), 675-683.</li> <li>12. Singh, A., M. Imtiyaz, R.K.Isaac, D.M.Denis. 2012. Comparison of soil and water assessment tool (SWAT) and multilayer perceptron (MLP) artificial neural network for predicting sediment yield in the Nagwa agricultural watershed in Jharkhand, India. Agric. Water Mgt., 104, pp.113-120.</li> <li>13. Ajai Singh, V.K.Jain, Jayanta Dutta. 2012. Comparison of Artificial Neural Network Models and Regression Model for Prediction of Evaporation for Malwa Region of Madhya Pradesh, India. International</li> </ol>
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Agricultural Engineering Journal, 21(3-4), 96-104.

14. Singh, A., M. Imtiyaz, R.K.Isaac, D.M.Denis. 2013. Comparison of Artificial Neural Network Models for sediment yield prediction at single gauging station of watershed in Eastern India, Jr. of Hydrologic Engineering, American Society of Civil Engineers. 18:1, 115-120.
15. Ajai Singh, V. K. Jain, Sanjeeb Bandhopadhyaya. 2013. Impact Assessment of Rainfall and Soil Temperature on Simulation of Daily Pan Evaporation using Multilayer Perceptron Model, Jr. of Interacademia, 17(30), 474-488.
16. V. K. Jain, Ajai Singh, O. P. Soni. 2013. Performance Evaluation of Recharge Pits Method of Artificial Recharge of Ground water in Madhya Pradesh, India. Advances in Water Resources and Protection, 1 (1), 1-10.
17. Ajai Singh, Sankar Saha, Sanchita Mondal. 2013. Modeling irrigated wheat production using the FAO AquaCrop Model in West Bengal, India for sustainable agriculture. Irrigation and Drainage (ICID), 62: 50–56.
18. Singh, A., M. Imtiyaz, R.K.Isaac, D.M.Denis. 2014. Assessing the performance and uncertainty analysis of Soil and Water Assessment Tool (SWAT) and Radial Basis Neural Network (RBNN) models for simulation of sediment yield in Nagwa watershed, India. Hydrological Sciences, 2(59): 351-364.
19. Ajai Singh. 2015. Modeling Stream Flow with prediction uncertainty by using SWAT hydrologic and RBNN Neural Network models for agricultural watershed in India. Natl. Acad. Sci. Lett., 39: 213.
20. Ajai Singh. 2015. Optimization of neural network structure for radial basis function network for simulation of hydrological processes. Indian Journal of Soil Conservation, 43 (3), pp 250-254.
21. Jha, S. and Singh A. 2015. Rainfall Runoff Modeling by Artificial Neural Network - A Case Study of Chotki Bharghi Watershed in Damodar Barakar Basin, Jharkhand. International Journal of Artificial Intelligence and Mechatronics, 4(2), pp. 69-73.
22. Surojit Sarkar, Vivek Vaibhav and Ajai Singh. 2017. Estimation of sediment yield by using Soil and Water Assessment Tool for an agricultural watershed in Eastern India. Indian Journal of Soil Conservation, 45 (1), pp 52-59.
23. Priyanka Rani, Ajai Singh. 2018. Evaluation of benchmarking indicators of Sanjay Sarovar Irrigation Project, India. Sustain. Water Resour. Manag., 4, 425-432. DOI 10.1007/s40899-017-0122-7.
24. Sunny Agarwal, J. Patil, V. C. Goyal, Ajai Singh. 2019. Assessment of water supply-demand using Water Evaluation and Planning (WEAP) model for Ur river watershed, Madhya Pradesh, India, J. Inst. Eng. India Ser. A, 100, 21-32. <https://doi.org/10.1007/s40030-018-0329-0>.
25. Singh, P., Patil, R.G. and Ajai Singh. 2018. Assessment of Recent

Changes in Planform of River Ganga from Mirapur Khadar To Narora Barrage, Uttar Pradesh, India, *Sustain. Water Resour. Manag.* 5(2), 575-586 [<https://doi.org/10.1007/s40899-018-0222-z>].

26. Puja Kumari, Annapurna Patra, C. Ramesh and Ajai Singh. 2018. Real time flood forecasting in the Godavari basin at Nashik Maharsatra, India, *Indian Journal of Power and River Valley Development*, 68(11-12), pp. 187-197.
27. Ajai Singh, Satyajit Mitra. 2018. Assessment of environmental flow requirements of damodar river basins by using flow duration indices method – a case study, *Int J Hydro.* 2(3):281-283. DOI: 10.15406/ijh.2018.02.00081.
28. Bhattacharya, A. K., Lodh, R., Roy, A. K., Karthik, D.M.P., Singh, Ajai., Kumari, S., Kumari, V., Daksh,K., Kumar, P., Anurag, Mishra, A. K. 2019. Arsenic Contamination in the Groundwater of West Bengal, Jharkhand and Bihar with a Special Focus on the Stabilization of Arsenic-Laden Sludge from Arsenic Filters” *Electronic Journal of Geotechnical Engineering*, 24 (2), pp. 605- 627.
29. Bhattacharya, A. K., Lodh, R., Roy, A. K., Karthik, D.M.P., Singh, Ajai., Mishra, A. K., Kumari, S., Kumari, V., Daksh,K., Kumar, P., Anurag, 2019. Analysis of Arsenic contamination in the groundwater of India-Bangladesh and Nepal with a special focus on the stabilization of arsenic laden sludge from arsenic filters. *Indian Journal of Power and River Valley Development*, March-April, pp. 49-67.
30. Tanisha Ghosh, B. Simhadri Rao, Ajai Singh. Monitoring Glaciers and Glacial Lakes of Chenab Basin using Geospatial Tools. 2019. *Journal of Remote Sensing & GIS.* 10(3): 1–11p.
31. Jai Kant Kumar Sharma, Ajai Singh. 2019. Development of Leachate Pollution Index of Jhiri Dumpsite; Ranchi, Jharkhand. *Indian Journal of Waste Management.* 3(2):53–59.
32. Randhir Kumar, Pratibha Kumari, P.K. Parhi, V.K. Tripathi, Ajai Singh. 2020. Modeling Future Water Supply and Demand in Jharkhand Region of Subarnarekha River Basin by using WEAP Model with RCP 4.5, *Ecology, Environment and Conservation*, 26(4):1597-1605.
33. Randhir Kumar, Pratibha Kumari, P.K. Parhi, V.K. Tripathi, Ajai Singh. 2020. Evaluating water supply risk in the middle reaches of Subarnarekha river basin by using WEAP model, *Indian Journal of Environmental Protection*, Accepted.
34. Ankita, Ajai Singh. 2020. A Brief Review of Micellar Enhanced Ultra filtration (MEUF) Techniques for Treatment of Wastewater in India, *Journal of Water Engg. and Management*, 1(1):14-33.
35. Jyoti Kerketta, Ajai Singh. 2020. Temporal Trend Analysis of Temperature Data using Mann-Kendall Test and Sen's Slope Estimator,

Journal of Water Engg. and Management, 1(1):34-46.

36. Shashank Shree, Manoj Kumar, Ajai Singh. 2020. Exploring spatial and temporal trends of diurnal temperature range in the region of the Subarnarekha river basin India, Spat. Inf. Res., doi.org/10.1007/s41324-020-00341-x.
37. Sarfraz Ahmad and Ajai Singh. 2020. Analysis of Groundwater Level Fluctuation using GIS Technique in Blocks of Ranchi District, Jharkhand, Indian Journal of Ecology, 47(4):934-938.
38. Fakeha Parween, Pratibha Kumari, Ajai Singh. 2020. Irrigation Water Pricing Policies and Water Resources Management, Water Policy (IWA), 23, 130-141.
39. Kumar Ashwini, Shehnaj Ahmed Pathan, Ajai Singh. 2020. Understanding Planform Dynamics of the Ganga River in Eastern Part of India, Spatial Information Research, DOI 10.1007/s41324-020-00373-3.
40. Anshu Kumari, Ajai Singh. 2020. Delineation of groundwater potential zone using Analytical Hierarchy Process, Journal of the Geological Society of India, Accepted.
41. Amit Kumar Jha, Ajai Singh, Pratibha Warwade. 2020. Effect of tropical dry and wet forest on convective precipitation – A case study of Ranchi Region, Jharkhand, India, Eco. Env. & Cons. 26 (4):1670-1677.
42. Kumari Anshumala, J.P Shukla, Shiv Singh Patel, Ajai Singh. 2020. Assessment of Groundwater Vulnerability Zone in Mandideep Industrial Area using DRASTIC Model, Journal of Geological Society of India, Accepted.
43. Pratibha Kumari and Ajai Singh. 2021. Crop Health Management and Farm Mechanization: Agriculture Beyond Today. SATSA Mukhapatra - Annual Technical Issue, 25, 66-72.

**Books and Book Chapters (Published/ Accepted)**

1. Ajai Singh, Ray, A. K., 2004. Rain Water Harvesting in North Bengal. Uttar Banga Krishi Vishwavidyalaya, Pundibari, Coochbehar.
2. Ajai Singh. 2012. Introduction of Drip Irrigation, N.D. Publishers, New Delhi, India.
3. Ajai Singh. 2012. Biodiesel plantations for livelihoods improvement and environmental protection. (ed) S. Chakravarty, G. Shukla, A. N. Dey. In: Tree-borne Oilseeds Species, Lambert Academy Publishing, Germany, pp: 82-96.
4. Ajai Singh, Mohd. Imtiyaz. 2013. Hydrological modelling using process based and data driven models. Lambert Academy Publishing, Germany, pp: 269.
5. Ajai Singh, R. P. Singh, 2013. Finite Element Analysis and Optimal Design of Drip Irrigation Sub-main. Lambert Academy Publishing, Germany, pp: 82.

	<ol style="list-style-type: none"> <li>6. Ajai Singh.2015. Economic Returns for Drip Irrigated Tomato. In ‘Research Advances in Sustainable Micro Irrigation: Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions. Ed. Megh R. Goyal.</li> <li>7. Ajai Singh. 2016. Water and Sustainable Development. N.D. Publishers, New Delhi, India.</li> <li>8. Ajai Singh, Megh R. Goyal. 2017. Micro irrigation engineering in horticultural crops: policy option, scheduling and design. In Innovation and Challenges in Micro Irrigation, Vol. 6 (Edited Book). CRC Press Taylor and Francis Group, USA. Hard ISBN: 9781771885409, E-Book ISBN: 9781315207421.</li> <li>9. Rajan Kumar Jha, A.K. Singh, L.R. Ranganath and Ajai Singh.2017. Study of Hydrodynamic and Sediment Transport in Gulf of Khambhat, Western Coast India—A Numerical Approach. In V. Garg et al. (eds.), Development of Water Resources in India, Water Science and Technology Library 75, DOI 10.1007/978-3-319-55125-8_7. Springer International Publishing.</li> <li>10. Ajai Singh. 2017. Maximizing profits by using different planting geometry under micro irrigation. In Megh R. Goyal (Ed.) Micro Irrigation Management – Technological advances and their applications. Vol. 5, pp 295-301.</li> <li>11. Ajai Singh. 2019. Wastewater Reuse and Watershed Management: Engineering Implications for Agriculture, Industry, and the Environment. Apple Academic Press.</li> </ol>
<b>Seminar/ Workshop/ Conference Participation:</b>	<ol style="list-style-type: none"> <li>1. Tiwari, K. N., J. Panda, <b>Ajai Singh</b>, P.K.Mal and R.P.Singh. 2000. Conservation, Storage and Effective Utilization of Rainwater. <i>Proc. National Workshop on Rainwater and Groundwater Management for Sustainable Rice Ecosystem</i>. September25-26, AgFE Department, IIT, Kharagpur, India and Institute of Water Resources and Hydrology, University of Hannover, Germany.</li> <li>2. Tiwari, K. N., <b>Ajai Singh</b> and P. K. Mal. 2001. Design and development of low-cost filter system. XXXV Annual Convention, <i>Indian Society of Agricultural Engineering</i>, Jan 22-25. SWE-01-13, Orissa University of Agriculture &amp; Technology, Bhubaneswar, India.</li> <li>3. <b>Singh, Ajai</b>. 2007. Economic analysis of capsicum crop under drip irrigation. Seminar on Drip and Sprinkler irrigation systems Development – Prospect, Technical Issues &amp; Solution. Organized by Jalpaiguri Govt. Engineering College and The Institution of Engineers (India). 27<sup>th</sup> April.</li> <li>4. <b>Singh Ajai</b>. 2008. Application of gamma distribution for analysis of rainfall for crop planning in Dakshin Dinajpur, West Bengal. Published in One Day Conference on Agricultural Input for the Development of the NE</li> </ol>



	<p>Region at Assam University. 3<sup>rd</sup> December.</p> <ol style="list-style-type: none"> <li>5. <b>Ajai Singh</b> and T. K. Das. 2009. Probability analysis of rainfall for crop planning in Dakshin Dinajpur, West Bengal. XLIII Annual Convention, <i>Indian Society of Agricultural Engineering</i>, February 15-17, Birsa Agriculture University, Ranchi, India.</li> <li>6. <b>Ajai Singh</b>, Mohd. Imtiyaz, R. K. Isaac, D. M. Denis. 2012. Performance evaluation and uncertainty analysis of SWAT model for simulating hydrological processes in an agricultural watershed in India. International SWAT Conference, Organized by IIT Delhi and Texas A &amp; M University, USA, July 18-20, New Delhi, India.</li> <li>7. Jayanta Dutta and <b>Ajai Singh</b>. 2012. Rainfall variability and food grain production in Uttar Dinajpur, Dakshin Dinajpur and Malda districts of West Bengal. Published in National Seminar on Biodiversity and Sustainability vis-à-vis Economic Development in the Northern Parts of West Bengal. RSM Raiganj, Uttar Dinajpur, West Bengal, India, August 26-27, 89.</li> <li>8. Ajai Singh. 2015. Quantification of uncertainty in .....neural network models in a National Workshop on ‘Challenges and Opportunities for management of Water Supplies in Rural Area’ during January 23-24, 2015 at ISM Dhanbad.</li> <li>9. Participated in World Irrigation Forum Meeting organized by International Commission on Irrigation &amp; Drainage at Chiang Mai, Thailand during November 6-8, 2016.</li> <li>10. Rupesh Kumar, K.H Barve, Ajai Singh, Tasneem Ahsan, L.R Ranganath. 2018. Assessment of Wave Energy Potential using 3-years Offshore Wind &amp; Wave Data near Ratnagiri, Maharashtra, INCHOE-2018, Indian Society for Hydraulics and Central Water &amp; Power Research Station, Pune, India</li> <li>11. Presented a paper on ‘Assessment of supply – demand by using Water Evaluation and Planning model for Ur river watershed, Madhya Pradesh, India’ during May 8-10, 2019 at Workshop: Science and Innovation for Catchment Management at University of Warwick, UK.</li> <li>12. Delivered Keynote lecture on ‘Impact of mining on environment in Ramgarh district of Jharkhand’ in Conference on Water Infrastructure for urban areas and industries at KIIT, Bhubaneswar organized by CEAI, New Delhi.</li> </ol>
<p><b>Projects and Consultancy</b></p>	<ul style="list-style-type: none"> <li>● Leading a team as Nodal Officer of Social Impact Assessment team of CUJ. Completed 21 Social Impact Assessment studies of Infrastructural projects of Government of Jharkhand, India.</li> <li>● Leading a team to evaluate the Detailed Project Report of Weirs/Check Dams constructed by Drinking Water and Sanitation Department, Government of</li> </ul>

	<p>Jharkhand, Ranchi.</p> <ul style="list-style-type: none"> <li>• Nodal Officer, Integrated Agromet Advisory Services, IMD, Ministry of Earth Sciences, Govt. of India.</li> </ul>				
<b>Program Organized:</b>	<ul style="list-style-type: none"> <li>• Convenor of National Conference on ‘Water and Sustainable Development’ organized in 2016.</li> <li>• Chairperson of organizing committee of International conference on ‘Water and Wastewater reuse and modelling in 2018.</li> </ul>				
<b>Invited Lectures</b>	1.	Topic of lectures	Name of program/Duration	Organized by	Level
	2.	Preparation of feasibility studies for irrigation projects	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency during February 6-20, 2015	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
	3.	Socio- economic evaluation of small-scale irrigation projects	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency during February 6-20, 2015	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
	4.	Irrigation efficiency of different types of irrigation system	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency during February 6-20, 2015	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
	5.	Water Auditing, Hydrologic cycle and Watershed water balance	Planning and Design of Rain Water Harvesting Structure and Utilization of Conserved Water through Micro-Irrigation System during January 13-22, 2015	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
	6.	Effective utilization of rain water for plants, domestic use, livestock, ground water recharge, water deficit and surplus.	Planning and Design of Rain Water Harvesting Structure and Utilization of Conserved Water through Micro-Irrigation System during January 13-22, 2015	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
	7.	Micro irrigation System and its Components	Planning and Design of Micro-Irrigation	S.C. Training Centre, SCD, DVC,	National

		System for Enhancing Water use Efficiency from 03.02.2016 to 17.02.2016	Hazaribagh, Jharkhand	
8.	Selection of MIS Filters and emission devises, fertigation through micro irrigation system	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency from 03.02.2016 to 17.02.2016	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
9.	Planning and Design of Micro irrigation System	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency from 03.02.2016 to 17.02.2016	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
10.	Design Example and Evaluation of Drip System, Installation, operation and maintenance of micro irrigation system and evaluation of drip system 05.02.2016	Planning and Design of Micro-Irrigation System for Enhancing Water use Efficiency from 03.02.2016 to 17.02.2016	S.C. Training Centre, SCD, DVC, Hazaribagh, Jharkhand	National
11.	Irrigation Scheduling for different Hydrological Pattern	Operation and Maintenance, Delivery, Repair, Renovation and Restoration of Water Resources system through Participatory Irrigation Management'	National Institute of Rural development, Hyderabad at SIRD, Hehal, Ranchi	National
12.	Irrigation Water Measurements	Operation and Maintenance, Delivery, Repair, Renovation and Restoration of Water Resources system through Participatory Irrigation Management'	National Institute of Rural development, Hyderabad at SIRD, Hehal, Ranchi	National
13.	Micro Irrigation- Principal and Design	Integrated Natural Resources Management	Jharkhand Tribal Development Society at Badalo Foundation, Boriya Road, Kanke Road, Ranchi	State
14.	Water Harvesting: Basic Concepts, Myths and Utility	21.11.2017	Soil Conservation Department, DVC, Hazaribagh.	National
15.	Demonstration of Indigenous Software for the Planning, Design and Analysis of Rainwater Harvesting Systems	21.11.2017	Soil Conservation Department, DVC, Hazaribagh.	National

	16.	Identification of Rainwater Harvesting Sites Using Geospatial Techniques: A Case Study	21.11.2017	Soil Conservation Department, DVC, Hazaribagh.
	17.	Water resources and water development and management	06.02.2018	Soil Conservation Department, DVC, Hazaribagh.
	18.	Micro-irrigation system and its components	07.02.2018	Soil Conservation Department, DVC, Hazaribagh.
	19.	Planning and design of micro-irrigation system	07.02.2018	Soil Conservation Department, DVC, Hazaribagh.
	20.	Management of waterlogged lands	20.11.2019	Soil Conservation Department, DVC, Hazaribagh.
	21.	Water Resources and Water Development and Management	04.02.2020	Soil Conservation Department, DVC, Hazaribagh.
	22.	Micro Irrigation System and its Components	05.02.2020	Soil Conservation Department, DVC, Hazaribagh.
<b>Membership and Fellowship</b>	Fellow of The Institution of Engineers (India) F-119631-2 Member of International Water Association (1623475) Indian Association of Soil and Water Conservationists (LM-2033) Life Member of Indian Water Resources Society (LM-08-7014) Life Member of Indian Association of Hydrologist (LM-1458)			
<b>Updated as on</b>	07 April. 2021			