

CURRICULUM VITAE

Dr W C D Kumari Fernando

Faculty of Engineering
General Sir John Kotelawala Defence University
Kandawala Road
Ratmalana
Sri Lanka
Tel: (94) 777808132, (94) 718132721
Email: kumari@kdu.ac.lk
cresentiafernando@gmail.com

WORKING EXPERIENCE

Feb 2017 – to date	Senior Lecturer Grade I, Department of Civil Engineering, Kotelawala Defence University
April 2019 – March 2020	Senior Lecturer Grade I, Department of Civil Engineering, University of Moratuwa (on Sabbatical Leave)
Aug 2016 – March 2019	Dean, Faculty of Engineering, Kotelawala Defence University, Ratmalana, Sri Lanka
Feb 2011 – Jan 2017	Senior Lecturer Grade II, Department of Civil Engineering, Kotelawala Defence University
2017 – to date	Visiting Lecturer, MSc in Civil and Structural Engineering, KDU
2011 - 2014	Head, Department of Civil Engineering, Kotelawala Defence University
2002 - 2008	Head, Department of Civil Engineering, Kotelawala Defence University
July 2001 – Jan 2011	Lecturer, Department of Civil Engineering, Kotelawala Defence University
Aug 1999 - June 2001	Assistant Lecturer, Advanced Technical Institute, Colombo

EDUCATION

2006 - 2011	PhD in Civil Engineering, University of Moratuwa, Sri Lanka Title of the research – An Integrated Approach for Estimating Probable Maximum Precipitation Incorporating the Concept of Threshold
2001 - 2005	Master of Engineering in Environmental Water Resources Engineering and Management, University of Moratuwa Title of the research – The Estimation of Probable Maximum Precipitation for Sri Lanka
1985 - 1992	BSc Degree in Engineering specialized in Civil Engineering, University of Moratuwa – First Class

MEMBERSHIP

Member	Sri Lanka Association for the Advancement of Sciences (SLAAS) President Section C of SLAAS in 2017 – Engineering, Architecture & Surveying
Associate Member	Institution of Engineers, Sri Lanka (IESL)
Member	Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)

TEACHING AND RESEARCH

Teaching - Undergraduate

Engineering Hydrology	BSc Engineering Degree Programme (CE), KDU – Semester 3, 2011-present
Hydraulic Engineering	BSc Engineering Degree Programme (CE), KDU – Semester 4, 2011-present
Irrigation Engineering	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2020
Hydraulic Engineering II	BSc Engineering Degree Programme (CE), UOM – Semester 5, 2019
Hydraulic Design	BSc Engineering Degree Programme (CE), UOM – Semester 7, 2019
Fluid Mechanics II	BSc Engineering Degree Programme (CE), KDU – Semester 2, 2012-2016
Fluid Mechanics III	BSc Engineering Degree Programme (CE), KDU – Semester 5, 2011-2015
Hydraulic Design	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2014-2015
Environmental Engineering I	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2010-2013
Environmental Engineering II	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2010-2013
Structural Mechanics I	BSc Engineering Degree Programme (CE), KDU – Semester 1, 2014-2015
Structural Mechanics II	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2012-2015
Applied Hydraulics & Hydrology	BSc Engineering Degree Programme (Biomedical), KDU – Semester 5, 2011-2012
Advanced Fluid Mechanics	BSc Engineering Degree Programme (CE), KDU – Semester 7, 2015
Building Construction	BSc Engineering Degree Programme (CE), KDU – 2001 to 2004
Theory of Structures I	BSc Engineering Degree Programme (CE), KDU – 2003 to 2005
Strength of Materials I	BSc Engineering Degree Programme (CE), KDU – 2005, 2012
Strength of Materials II	BSc Engineering Degree Programme (CE), KDU – 2002 to 2005
Public Health Engineering	BSc Engineering Degree Programme (CE), KDU – 2003 to 2005
Disaster Risk Management	BSc Social Science, BSc Logistic Management, BSc Management & Technical Science & BSc Engineering (Civil Engineering) Degree Programmes at KDU 2012-2013

Teaching - Postgraduate

Water Resources Engineering	MSc Civil & Structural Engineering, KDU – Year I, Semester I, 2016-present
Research Methodology	MSc Civil & Structural Engineering, KDU – Year I, Semester II, 2016-present
Non Military Security	MSc Military Science & Technology – Year II, Semester II, 2014

Publications

- **Fernando, W. C. D. K.** and Bandara, R. M.P.S. (2020). “Reading as a learning strategy for engineering undergraduates”, *Innovations in Education and Teaching International*, <https://doi.org/10.1080/14703297.2020.1835687>
- **Fernando, W. C. D. K.** and Wickramasuriya, S. S. (2021). “Concept of threshold in the estimation of Probable Maximum Precipitation: Hershfield’s method revisited”, *Journal of Hydrologic Engineering*, 26 (3), 10.1061/(ASCE)HE.1943-5584.0002045
- **Fernando, W. C. D. K.**, Wijesinghe, A. V. G. G. and Athapattu, B. C. L. (2020). “Capturing rainwater for urban living”, *Journal of Engineering Technology*, Vol. 8 (1), pp. 33-40.
- **Fernando, W. C. D. K.** and Wickramasuriya, S. S. (2011). “The hydro-meteorological estimation of probable maximum precipitation under varying scenarios in Sri Lanka”, *International Journal of Climatology*, Vol. 31, pp. 668-676.
- Naveendrakumar, G., Vithanage, M., Kwon, H., Chandrasekara, S. S. K., Iqbal, M. C. M., Pathmarajah, S., **Fernando, W. C. D. K.** and Obeysekera, J. (2019). “South Asian perspective on temperature and rainfall extremes: A Review”, *Atmospheric Research*, 225, pp. 110-120.
- Wickramasuriya, S. S. and **Fernando, W. C. D. K.** (2012). “Challenges in dam safety and extreme rainfall estimation in relation to Sri Lanka”, *Engineer*, Journal of the Institution of Engineers, Sri Lanka, Vol. XXXXV(01), pp. 39-49.
- **Fernando, W. C. D. K.** and Wickramasuriya, S. S., (2007). “Estimating probable maximum precipitation – from research to design”, *Engineer*, Journal of the Institution of Engineers, Sri Lanka, Vol. 40(4), pp. 116-122.
- Bandara, R. M. P. S. and **Fernando, W. C. D. K.** (2020). “Positive perceptions and improved engineering undergraduate course design following a staff development session on constructive alignment”, 16th Annual SLAIHEE Conference on Higher Education in Sri Lanka, pp. 37-42.
- Wickramarachchi, W. C. P., Gunasekara, N. K., **Fernando, W. C. D. K.** and Wickramasuriya, S. S., (2019). “A study of flood forecasting and mapping for the Attanagalu oya”, 5th International Conference on Science, Engineering and Environment (SEE), Bangkok, Thailand, pp 735-740.
- Bandara, R. M. P. S. and **Fernando, W. C. D. K.** (2019). “Use of divergent assessment method to assess computational modelling competencies of Engineering undergraduates”, 15th Annual SLAIHEE Conference on Higher Education in Sri Lanka, pp. 1-4.
- Bandara, R. M. P. S., Attalage, R. A. and **Fernando, W. C. D. K.** (2018). “Optimizing life cycle cost of buildings through simulation-based optimization”, 6th International Conference on Architecture and Civil Engineering, Singapore. pp. 361-368.
- Bandara, R. M. P. S. and **Fernando, W. C. D. K.**, “Use of groupwork to promote design competencies of Mechanical Engineering undergraduates”, 14th Annual SLAIHEE Conference on Higher Education in Sri Lanka, pp 1-5, 2018.

- **Fernando, W. C. D. K.** and Wickramasuriya, S. S., “Probabilistic modelling of extreme rainfall events within the wet zone of Sri Lanka”, Proceedings of the 20th IAHR-APD Congress, Colombo, Sri Lanka, 2016.
- Bandara, R. M. S. P., Attalage, R. A. and **Fernando, W. C. D. K.**, “Making realistic predictions on building energy performance through coupled energy simulation and computational fluid dynamics”, National Energy Symposium, 2015.
- **Fernando, W. C. D. K.** and Kumanayake, R. P., “Implementing outcome based education through problem based learning: A case study of Kotelawala Defence University”, *Expanding developmental horizons through education, research and innovation*, International Research Conference, 2014, General Sir John Kotelawala Defence University, 2014.
- Samarakoon, M. B. and **Fernando, W. C. D. K.**, “A comparison of water quality changes in Kandawala lake before and after restoration”, Sustainable development through equitable sharing, Wayamba International Conference, WinC 2014, Wayamba University of Sri Lanka, Proceedings, p. 84, 2014.
- **Fernando, W. C. D. K.** and Wickramasuriya, S. S., “The behavior of daily rainfall extremes in the context of climate change”, *Ensuring national security through reconciliation and sustainable development*, Annual Symposium, 2012, General Sir John Kotelawala Defence University, 2012.
- **Fernando, W. C. D. K.** and Indrarathne, H. D. B. N., “Applicability of English language teaching methodology in teaching Engineering subjects to promote active learning” Challenges in post conflict of Sri Lanka, Annual Symposium, 2011, General Sir John Kotelawala Defence University, p. 77, 2011.
- **Fernando, W. C. D. K.** and Wickramasuriya, S. S. “A statistical approach for estimating the probable maximum precipitation in Sri Lanka”, *Proceedings of the National symposium on Promoting Knowledge Transfer to Strengthen Disaster Risk Reduction and Climate Change adaptation*, Environmental Committee of the Sri Lanka Association for the advancement of Science and Disaster Management Centre, pp. 108-115, 2009.
- **Fernando, K.** and Waidyasekera, D. L., “Lake pollution control and need for restoration – The case of Kandawala lake, Ratmalana”, *Proceedings of the Water Professionals’ Day Symposium*, Session 01, pp. 63-77. October, 2007.
- **Fernando, K.** and Wickramasuriya, S. S., “Some issues in the estimation of probable maximum precipitation”, *Proceedings of International Conference on Sustainable Water Resources Management in the changing environment of the monsoon region, Sri Lanka*, United Nations University: Japan, Vol. 1, pp. 153-165. November, 2004.

Awards:

- Merit award for scientific publication in the year 2011, awarded by the National Research Council (NRC) in 2014
- Award for *learning, teaching and assessing* under the professional development programme which was recognized by the Staff and Educational Development Association (SEDA), England, in September 2011.
- Best technical paper (First place) award for “Water Resources Development and Future Challenges” – Role of Engineering and Technology, sponsored by International Water

Management Institute (**IWMI**) and Institution of Engineers, Sri Lanka (**IESL**), Session 2010/2011

- Best Research Paper Award at the Vidulka National Energy Symposium in 2015
- Best Oral Presentation Award at 73rd Annual Sessions of SLAAS Section C – Engineering, Architecture and Surveying in 2017

Contribution as a Resource Person:

- Worked as a resource person in the online CPD course via Webinar on “Time Series Modelling and Forecasting” organized by SLAAS & Sri Lanka Agricultural Economics Association (SAEA) from 21st to 31st August 2020.
- Worked as a resource person in the workshop on “Hydrologic Modeling using HEC-HMS & HEC-RAS” organized by SLAAS & IESL from 15 to 17th October 2018.
- Guest Lecture on “Sri Lanka: Coping with natural disasters – Challenges and Opportunities” at the workshop of Resilient Communities – how to effectively cope with water-related disasters organized by the University of Kaiserslautern, Germany from 11 to 13th April 2018.
- Curriculum Development Workshops conducted by Curriculum Revision Committee of the Faculty of Engineering, KDU.
- Staff Development Programme at KDU since 2014 Delivered a presentation on “Levels of learning and learning outcomes”.
- Updating the Haritha Lanka Programme, Mission 10 – Knowledge for right choices conducted by the Ministry of Environment and Renewable Energy in 2014 and 2015.
- Project of Mainstreaming Disaster Risk Reduction (MDRR) into urban development, National Consultation Workshop, Disaster Management Centre, 2014.
- 7th NARBO (Network of River Basin Organization) / IWRM Training programme conducted by the Ministry of Irrigation and Water Resources Management at MAS Fabric Park, Thulhiriya on 3rd November 2012. Delivered a presentation on “Impact of Climatic Changes on Dam Safety and Water Resources Management”.
- Training programme in “Training Needs Analysis in TVET” conducted by the Department of Technical Education and Training in collaboration with Colombo Plan Staff College, Philippines on 11th December 2012 at the University of Vocational Technology (UNIVOTEC), Ratmalana.
- Chaired the 3rd Annual Symposium of Kotelawala Defence University under the theme Sharing knowledge for sustainable peace on 20th August 2010.
- Planned and developed Hydraulic Engineering Laboratory
- Chair/Member of University/Faculty committees
- Introduced several course modules for Civil Engineering degree programme
- Involved in research collaboration
 - University of Kaiserslautern, Germany
 - University of Otago, New Zealand – Initiated as the Dean of the Faculty
 - Monsoon Research Group at the Potsdam Institute for Climate Impact Research, Germany