COGNITIVE HUMAN FACTORS AND ADVANCED SOCIOTECHNICAL SYSTEMS SAFETY

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Overview

The aim of this course is to serve as an introduction to the topics of *Cognitive Human Factors and Advanced Sociotechnical Systems Safety*. Human Factors involves the study of human capabilities and limitations and serves a basis for advanced human technology interaction design. This knowledge will help engineers in design more human-centric systems. and averting disasters. In our modern day world, many disasters develop due to inherent design and operational issues in systems. Thus, the aim of this course is to help engineers identify the challenges related to design and operation of advanced sociotechnical systems to ensure safety, health and well-being of the workers.

In this course, the learners will be introduced to the breadth and scope of Cognitive Human Factors Engineering. They will be introduced to ways in which humans are conceptualized in work systems as well as how design of jobs is connected to new challenges of automation. Thus, demonstrating the necessity and viability of Cognitive Human Factors Engineering for the design of human-centric systems. Further, the course focuses on advanced safety related design and interaction design for systems (control panel design). The learners will be introduced to basic issues and models for safety as well as cognitive work/task analysis methods. These methods will help in understanding cognitive work in technological contexts as well as designing control panels based on the understanding received from the work. The learners will also be introduced to systems analysis safety-critical systems and advanced concepts related to errors, safety, accidents and resilience in safety-critical systems. There will be a special focus on safety within sectors and across various sectors in systems design.

The aim of this course is also to bring together the various streams of ideas and concepts related to cognitive human factors and advanced systems safety together into a coherent whole. At the end of this course, the learners will have a comprehensive overview of human factors engineering and advanced sociotechnical systems safety.

Modules	**Cognitive Human Factors And Advanced Sociotechnical Systems Safety: May 18 - May 22 2020** **Number of participants for the course will be limited to thirty.**
You Should Attend If…	▪ **Engineers** and **designers** working in any sectors as long as they are involved in designing for humans in technological contexts. o For engineers: This course will be, specifically, beneficial for mechanical; electrical and electronics (control panel design); automotive; transportation; aerospace; marine; industrial; systems and safety engineering. o For Designers: This course will be beneficial for interaction design, service and systems design Industry participants, faculty members and students of degree level engineering colleges are eligible to attend
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $500** **Industry/ Research Organizations: INR 30000** **Academic Institutions: INR 10000** The participants will be provided with accommodation on payment basis.

The Faculty

Patrick Waterson, Ph.D. is widely recognized as a leading international expert in the application of human factors to safety across a range of industries (healthcare, rail, nuclear, construction). His research is inter-disciplinary and focuses on applying human factors to improve the safety and resilience of complex sociotechnical systems. He currently works as a Reader in Loughborough University, UK. He joined Loughborough University in 2007. In 2014 he was awarded the William Floyd Medal from the UK Institute of Ergonomics and Human Factors for outstanding contribution to the field of Human Factors. Prof. Waterson is Editor-in-Chief for 'Policy and Practice in Health and Safety' (the official journal of the Institute of Occupational Safety And Health, IOSH), an Associate Editor for BMC Medical Informatics And Decision-Making and serves on the editorial boards of Applied Ergonomics, Cognition, Technology and Work, IIE Transactions on Occupational Ergonomics and Safety Science.

Vivek Kant, Ph.D. is currently employed as an Assistant Professor at the Industrial Design Centre (IDC School of Design), Indian Institute of Technology Bombay (IDC, IITB). He is cross-trained in both engineering and cognitive/behavioural sciences. He has published in reputed journals in human factors such as Theoretical Issues in Ergonomics Science; Cognition, Technology and Work; and Human Factors in Manufacturing and Service Industries. His research interests are His research interests are human factors, human computer interaction, history and philosophy of engineering, and sociotechnical systems.

Course Co-ordinator

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