Conventional and Intelligent Measures for Enhancing Road Safety

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Overview

Road safety is a global concern, and road crashes are one of the leading causes of unnatural deaths in India. As the country is facing substantial economic losses due to road accidents, it is essential to take necessary countermeasures to bring down the number of accidents and fatalities on Indian roads. Engineers, planners and professionals involved in the field of traffic and transport have a vital role to play to enhance the road safety. The proposed course is aimed to help them to develop insights related to road safety problems, learn different tools and techniques for analysis and develop measures for mitigation of road safety issues. The course is designed in two modules keeping in mind the requirements of students, researchers and working professionals. The course will i) provide knowledge to participants regarding accident data collection and analysis, (ii) make participants aware of different conventional and intelligent measures for enhancing road safety, (iii) provide exposure to participants through on-field practical problems and exercises, (iv) enable participants to perform road safety audit and suggest proper countermeasures to enhance road safety.

The course will include both conventional measures and intelligent measures for enhancing road safety. The conventional measures include collection of accident data, statistical and econometrical analysis of accident data to identify the factors contributing to road accidents, identification of black spots and accident investigation. The course will also provide an overview of road safety audit and various safety issues identified on Indian roads during audit. The knowledge of driving rules and regulations is another important aspect in the context of road safety. An orientation will also be provided to participants in this regard to formulate appropriate policies and measures. As secondary data is abundantly available for various road sections, intelligent techniques are also being used for enhancing road safety. Some of the intelligent techniques which are used for enhancing road safety are Smart Speed Bumps (SSB), Variable Message Sign (VMS), application of GPS-enabled smartphone apps, application of IoT (Internet of Things) Safety systems, Road Health Monitoring systems, etc. The participants will also be introduced to these intelligent measures for enhancing road safety.

Modules	
	Module A: **1. Traffic Accident Studies** : Dec 10 - Dec 12, 2018 **2. Accident Data Collection** **3. Identification of Blackspots** **4. Analysis of Accident Data** **5. Car Ownership and Usage** **6. Driving Psychology and Behavior** **7. Knowledge of Safe Driving Rules** **8. Road Safety Audit** **9. History of Traffic Safety Measures in Japan** **10. Intelligent Traffic Safety Measures** **11. Detection of Driving Risks based on Smartphone Apps** **Module B:** **1. Capturing Factors affecting Traffic Accidents** : Dec 13 - Dec 14, 2018 **2. Blackspot Identification and Development of Safety Performance Function** **3. Interview of Drivers to identify Human Factors affecting road accidents** **4. Identification of Deficiencies and Suggestion of Countermeasures** **5. On-site Observations about Driving Conflicts, Safety Issues and Recommendations** **Module B is optional only for the participants from Government Organizations and industry.** Number of participants for the course will be limited to sixty.

Who can attend	- Students at all levels (B. Tech/ B.E. / B. Arch/M. Tech/M. Arch/ MCP/Ph. D) or Faculty from reputed academic institutions related to the field of Civil Engineering/ Transportation Engineering/ Infrastructure Design/ Infrastructure Planning/Architecture. - Executives, engineers, researchers and working professionals from Government organizations (e.g. PWD, MORTH, NHAI, Transport Department, Traffic Police, etc.) or Private Sectors (say, Consultants, Concessioners, etc.) and R&D Organizations in related fields.
Fees	The registration fees (per person) for taking the course are as follows: - Category-A Academic Institutes (Student) from India: No Fee - Category-B Academic/ R & D Organizations (Faculty/Scientist) from India: INR 10000 - Category-C Academic/Research/Government Organizations from Abroad: US $500 - Category-D Government Organizations/ Private Sectors: INR 12000 (Module A Only) and INR 18000 (for both Module A and Module B) The registration fees for Category A and Category B do not include accommodation. The participants will be provided with accommodation facility on payment basis. The registration fees for Category C and Category D include accommodation on twin sharing basis in Technology Guest House.

The Faculty

Prof. Dr. Eng. Junyi Zhang is the Head of Division of Development Science and Chair of Department of Development Technology in Graduate School for International Development and Cooperation, Hiroshima University, Japan. His major research fields are Urban and Regional Planning, Transportation Planning and Engineering, Environment and Energy Policy and Tourism Policy. For further information please visit **https://sites.google.com/site/junyizhangcho/home**

Prof. Bhargab Maitra is a Professor of Department of Civil Engineering, and the Head of RCG School of Infrastructure Design and Management, IIT Kharagpur, India. His research interests are Travel Behavior Analysis, Public Transport, Intelligent Transport System, Electric Mobility and Urban Traffic Management. For further information please visit **http://www.facweb.iitkgp.ac.in/~bhargab/index.html**

Course Co-ordinator

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MHRD Scheme on Global Initiative on Academic Network (GIAN)

Course title: Conventional and Intelligent Measures for Enhancing Road Safety

Venue: Indian Institute of Technology Kharagpur, Dec 10-14, 2018

Module A(14 hrs): Dec 10-12 (Lecture 1-11) **Module B(10 hrs):** Dec 12-14 (Tutorial 1-5)
(Module B is optional only for the participants from Government Organizations and industry)

Details of Lectures and Tutorials

Lecture	Topic	Speaker	Duration
Lecture 1	Traffic Accident Studies	Prof. Junyi Zhang	2 hrs.
Lecture 2	Accident Data Collection	Prof. Bhargab Maitra and Prof. Sudeshna Mitra	1 hrs.
Lecture 3	Identification of Blackspots	Prof. Bhargab Maitra	1 hrs.
Lecture 4	Lecture 4: Car Ownership and Usage	Prof. Junyi Zhang	1 hrs.
Lecture 5	Analysis of Accident Data	Prof. Sudeshna Mitra	1 hrs.
Lecture 6	Driving Psychology and Behavior	Prof. Junyi Zhang	1 hrs.
Lecture 7	Knowledge of Safe Driving Rules	Prof. Bhargab Maitra and Prof. Swati Maitra	1 hrs.
Lecture 8	Road Safety Audit	Prof. Bhargab Maitra and Prof. Jahar Ranjan Sarkar	1 hrs.
Lecture 9	History of Traffic Safety Measures in Japan	Prof. Junyi Zhang	2 hrs.
Lecture 10	Intelligent Traffic Safety Measures	Prof. Junyi Zhang	2 hrs.
Lecture 11	Detection of driving risks based on smartphone apps	Prof. Junyi Zhang	1 hrs.

Tutorial	Topic	Speaker	Duration
Tutorial 1	Capturing Factors affecting Traffic Accidents	Prof. Junyi Zhang	2 hrs.
Tutorial 2	Blackspot Identification and Development of Safety Performance Function	Prof. Bhargab Maitra and Prof. Sudeshna Mitra	2 hrs.
Tutorial 3	Interview of Drivers to identify Human Factors affecting road accidents	Prof. Junyi Zhang	2 hrs.
Tutorial 4	Identification of Deficiencies and Suggestion of Countermeasures	Prof. Junyi Zhang, Prof. Bhargab Maitra, Pr. Jahar Ranjan Sarkar	2 hrs.
Tutorial 5	On-site Observations about Driving Conflicts, Safety Issues and Recommendations	Prof. Junyi Zhang, Prof. Bhargab Maitra, Prof. Sudeshna Mitra and Prof. Jahar Ranjan Sarkar	2 hrs.