

Report on

INTERNATIONAL COURSE ON ROAD SAFETY AUDIT AND ROAD CONSTRUCTION SAFETY

22 November - 10 December 2021

Course Coordinators

Geetam Tiwari K Ramachandra Rao K.N. Jha

2021



TRIP CENTRE, INDIAN INSTITUTE OF TECHNOLOGY DELHI; MINISTRY OF ROAD TRANSPORT AND HIGHWAYS, INDIA MINISTRY OF HOUSING AND URBAN AFFAIRS, INDIA INDEPEN DENT COUNCIL FOR ROAD SA FET Y INTER NATIONAL (ICORSI) NATIONAL HIGHWAY AUTHORITY OF INDIA WORLD HEALTH ORGANISATION

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International Course on Road Safety Audit, Road Construction Safety, Biomechanics and Crashworthiness

Background

An International Course on Road Safety Audit, Road Construction Safety, Biomechanics and Crashworthiness was organised by Transportation Research & Injury Prevention Centre (TRIP Centre), Indian Institute of Technology, Delhi, on 22 November – 10 December 2021. The course was supported by the Ministry of Road Transport and Highway, Govt. of India, Ministry of Housing and Urban Affairs, Govt. of India, National Highway Authority of India, Independent Council for Road Safety International (ICoRSI) and South East Asia Region, World Health Organisation. The details are as follows.

Course Coordinators

Prof. Geetam Tiwari Prof. K.R. Rao Prof. K.N. Jha Prof. Puneet Mahajan

Location

Indian Institute of Technology Delhi, New Delhi, India

Period

22 November – 10 December 2021

Purpose

Traffic crashes and injuries are serious problems both in less and highly industrialized countries. More years of working life are lost due to crash injuries in both groups of nations than that due to cardio vascular diseases and cancer. It is important that more professionals become aware of the importance and possibilities of injury control, and the basic principles regarding the same.

Target group

Traffic and road engineers, behavioral scientists, mechanical and automotive engineers, law enforcers and police officers.

Objectives

This fifteen days Course targeted to bring together professionals working in the area of transportation planning, safety promotion, biomechanics of impact and vehicle

crashworthiness, road construction safety and acquaint them with state-of-the-art information. The course was especially designed for an interdisciplinary audience of traffic and road engineers, behavioural scientists, mechanical and automotive engineers, law enforcers, and police officers. It focussed to give a global perspective to the road safety problem. The course was divided into three modules. Module 1 was compulsory for all participants followed by three parallel sessions on Road Safety Audit, Road Construction Safety and Biomechanics and Crashworthiness.

The course contents were designed in such a manner so that by the end of the Course the participants should be aware of:

- The latest scientific knowledge regarding traffic planning, prevention of traffic accidents and injuries, and current advances in vehicle crashworthiness and restraint systems. crashworthiness and restraint systems
- Policies and methods which have been shown to be successful and those that have not worked in the past.

They should be able to:

- Improve or start their own programmes on traffic planning and road safety, design data collection systems and avoid pitfalls common in data analysis.
- Propose and implement road safety countermeasures.
- Provide inputs for local and national road safety policies.

Course structure

- Week 1 & 2 : Course held with an option for online participation.
- Week 3 : Required mandatory "in person" participation.
- Participants in the Road Safety Audit module joined course "in person" to fulfil the requirements to get a "Road Safety Auditors Certificate" as recommended by the IRC/MoRTH (submission of practical audit report and written exam).

Course Participants

A total of 84 participants including faculty attended the course out of which 6 participants represented 4 countries other than India.

Course Faculty

Prof. Geetam Tiwari	IIT Delhi, India
Prof. K.N. Jha	IIT Delhi, India
Prof. K.R. Rao	IIT Delhi, India
Prof. Nezamuddin	IIT Delhi, India
Dr. Rahul Goel	IIT Delhi, India
Prof. S.B. Paul	IIT Delhi, India
Prof. Sudipto Mukherjee	IIT Delhi, India
Prof. Ravi Shankar	IIT Delhi, India
Mr. A.K.(Dunu) Roy	Hazard Centre, India
Prof. Dilip Patel	SVNIT, Surat

Prof. Girish Agarwal Mr. Jigesh N Bhavsar Dr. Mathew Varghese Dr. P.D. Nayar Dr. Sadhu S L N Sarma Prof. Hermann Knoflacher Prof. Shrikant I Bangdiwala Dr. Sylvain Lassarre Prof. Amarjit Singh Prof. Kavi Bhalla Shiv Nadar University, India ADB, iRAP, India St. Stephens Hospital, Delhi, India SEAR, WHO, India Safety Expert, India University of Technology, Vienna, Austria McMaster University, Canada IFSTTAR, France University of Hawaii, USA Bloomberg School of Public Health, USA

<u>Course Kit</u>

- 1. Road Safety in India: Status Report 2020
- 2. World Report on Road Traffic Injury Prevention
- 3. Road Traffic Injury Prevention, Training Manual
- 4. Important Specifications From Various Codes For Safer Roads
- 5. Course presentation

Course Programme

The course was delivered in two modules:

- 1. Road Safety Audit
- 2. Road Construction Safety

Module I: COMMON FOR ALL PARTICIPANTS (Online Module)

Day:1 (Monday) 22-11-2021 (10.00 – 13:30)				
10.00 -11.00	Welcome	Prof. S.G. Deshmukh, Deputy Director(O), IIT Delhi		
	Introduction Prof. G. Tiwari, Head TRIP-Centre			
	Course details	Prof. K.R Rao		
	Introduction of participants	Prof. K.N. Jha,		
	Introduction to IRC Safety Audit Certification	Mr. S.K. Nirmal, Secretary General IRC		
11.00-11:30	RTI in SEAR Countries	P.D. Nayar, SEAR, WHO		
11.45-13.30	Road Traffic Injury National Trends and Transport safety principles	Geetam Tiwari		

Day: 2 (Tuesday) 23-11-2021 (10:00 – 13:30)						
10.00-11.30	Road Traffic Injury as a Public Health Problem	Kavi Bhalla				
11.45-13.30	Sustainable Transport paradigm	Hermann Knoflacher				
Day:3 (Wednesday) 24-11-2021 (10:00 – 13:30)						
10.00-11.30	International Road Safety Comparison	Kavi Bhalla				
11.45-13.30	Traffic Safety Legislations /MVA	Girish Agrawal				
Day: 4 (Thurs	day) 25-11-2021 (10:00 – 13:30)					
10.00-11.30	Accident and Injury Data Recording	Rahul Goel				
11.45–13.30	1.45–13.30Human Tolerance to Injuries and Road Safety & Safer Vehicle Design TechniquesSudipto Mukherjee					
Day:5 (Friday) 26-11-2021 (14:00 – 17:30)					
14.00-15.30	Enforcement and Road Safety	Rahul Goel				
16.00-17.30	Statistical Issues in road safety	Shrikant Bangdiwala				
Day:6 (Monda	ay) 29-11-2021 (14:00 – 17:30)					
14.00-15.30	Speed and Safety	K. R. Rao				
15.45-17:30	Risk Assessment Models	Sylvain Lassare				
Day:7 (Tuesd	ay) 30-11-2021 (14:00 – 17:30)					
14.00-15.00	Urban Road Design	Geetam Tiwari				
15.00-16.00	Road Safety in Urban Areas	Herman Knoflacher				
16.00-17.30	Evaluation of Safety Measures	Shrikant Bangdiwala				
Day:8 (Wednesday) 01-12-2021 (14:00 – 17:30)						
14.00-15.30	Highway Safety Standards (Blackspot Inspection)/	Rahul Goel				
15:30-16:00	Safety Film					
16:00-17.30	Variables Influencing Driver Speed	Sylvain Lassare				

Day:9 (Thursday) 02-12-2021 (14:00 – 17:30)				
14.00-15.30	Road Accident Costing	Sourabh Paul /DIMTS		

15.45-17.30	Prehospital care Mathew Varghese			
Day:10 (Friday) 03-12-2021 (14:00 – 17:30)				
14.00-15.30	Traffic Calming & VRU Safety	Geetam Tiwari		
15.30-17.30	ITS and Traffic Safety	Nezamuddin		
Day:11 (Monday	y) 06-12-2021 (10:00 – 14:00)			
10.00-11.30	Highway Acts + Road Side Hazard Management	SSLN Sarma		
11.30-13.00	Highway Construction Zone Safety	K.N. Jha		
13:00 - 14:00	Hill Road Safety	Girish Agrawal/KN Jha		

IN PERSON MODULE

Venue: IRD Conference Room, 7th Floor, Main Building, IIT Delhi.

Day:12 (Tuesday) 07-12-2021						
09:00-10:00	IRAP Jigesh					
10.00-11.00	Road Safety Audit Preparation All Faculty and Participants					
11.00-13.30	Field Audit					
14.00-17.00	Safety Audit Findings and report preparation					
Day:13 (Wednes	sday) 08-12-2021					
10.00-17.30	Highway Field Audit					
Day: 14 (Thurse	lay) 09-12-2021 For Certificate Cours	se Only				
09.30-11.30	09.30-11.30 Exam 1					
12.00-13.30 Exam 2						
13.30-14.30	13.30-14.30 LUNCH					
14.30-17.30 Audit Report Preparation						

Day: 15 (Friday) 10-12-2021 (All participants)				
10.00-12.00	Audit report presentation			
12:00 - 12:30	Feedback and discussion			
12:30 - 14:00	Valedictory session - Prof. Sanjay Mitra,			
	Member, Supreme Course Committee on Road Safety			
14.00-	LUNCH			

Road Construction Safety (Module 3B) from Day 11

Day:11 (Monday) 6-12-2021 (Online)				
10.00-11.30	Zero Accident Techniques Amarjit Singh			
11.45 – 13.15	Construction labour related issues A K (Dunu) Roy			
Day:12 (Tuesda	ay) 7-12-2021			
10.00-11.30	Why Injuries Occur in Construction Amarjit Singh			
11:30-13:00	Accidents in Construction industry K N JHA			
Day:13 (Wedne	esday) 8-12-2021			
10:00-11:30	Safety and Reliability in construction projects	Ravi Shankar		
11.30 - 13.00	Risk assessment in construction projects Dilip Patel			
Day:14 (Thursd	ay) 9-12-2021			
10:00-11:30	Tort Law, Liability, and Standard of Care Amarjit Singh			
11:30-13:00	Temporary Structures Safety and Design Issues K N Jha			
Day:15(Friday) 10-12-2021 -				
10:00-11.30	Safety Incentives Amarjit Singh			
11:30-13:00	Failure cases in constructionK.N.Jha			
13:00-14:00 Lunch				
14:00-17:30	17:30Safety issues related to formwork in multistoreyed building construction, Presentation and QuizK N Jha			

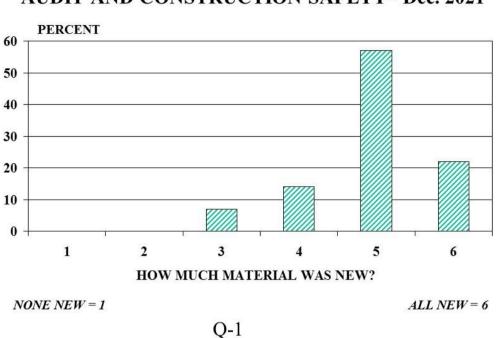
Course Evaluation Form

The course was evaluated by participants as per the questions given below:

Please evaluate the CONTENT of the Course

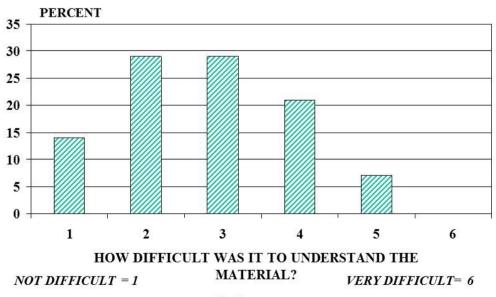
1. How much of the material was new to you?							
	1 no new materia		2	3	4	5	6 all new material
2.	How difficult was it to unders	stand	the ma	aterial?	1		
	1 extremely difficult to understand		2	3	4	5	6 very easy to understand
3.	How useful will the information	on be	e to you	ı in you	ır job?		
	1 not at all useful		2	3	4	5 extrer	6 nely useful
Addit	ional comments about the COI	NTE	NT:				
	dition to considering the TOPI t HOW THE COURSE WAS C				, we ar	e inter	ested in your view
4.	How appropriate was the len	igth c	of this c	course?	2		
	1 much too long		2	3	4	5	6 much too short
5. How useful were the presentations?							
	1 not at all useful		2	3	4	5 extrer	6 nely useful
6. How useful were the resource materials?							
	1 not at all useful	I	2	3	4	5 extrer	6 nely useful

Please give your comment on how such a course can be conducted better in the future (use reverse of the sheet if necessary)



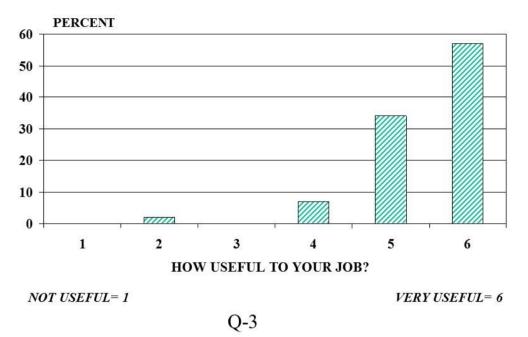
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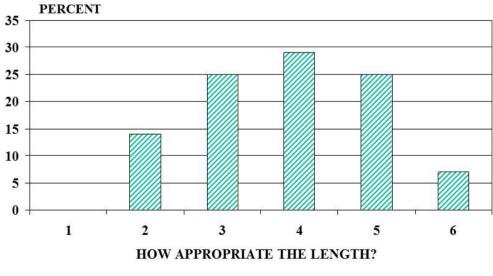


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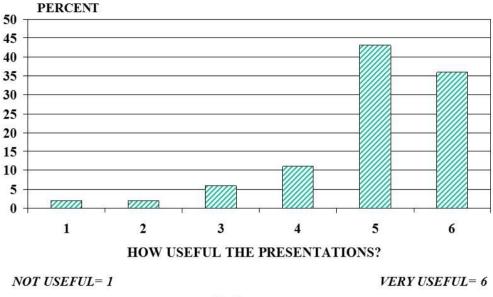


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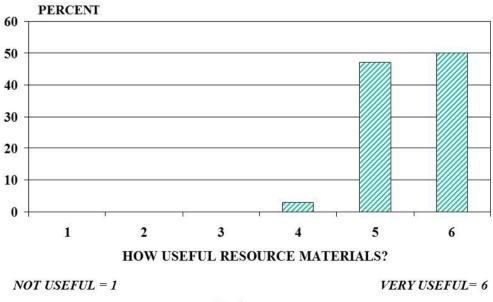
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Course Participants List

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On

ROAD SAFETY AUDIT, ROAD CONSTRUCTION SAFETY, BIOMECHANICS & CRASHWORTHINESS

22 November - 10 December, 2021

This course was designed to bring together professionals working in the area of transportation planning, safety promotion, biomechanics of impact and vehicle crashworthiness, road construction safety to acquaint them with the state-of-the-art information in the field. The contents of the course were especially focussed to give a global perspective to the road safety problem. The participants have been exposed to

- The latest scientific knowledge regarding traffic planning, prevention of traffic accidents and injuries, construction safety issues and current advances in vehicle crashworthiness and restraint systems
- Policies and methods which have been shown to be successful and those that have not worked in the past
- Strategies for starting local programmes in road safety

Geetam Tiwari

K.R. Rao Course Coordinators K.N. Jha

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