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**ENVIRONMENTAL ENGINEERING AND MANAGEMENT
DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR**

THREE DAY SHORT TERM COURSE ON

INTRODUCTION TO

LIFE CYCLE ASSESSMENT

FROM THEORY TO PRACTICAL APPLICATIONS

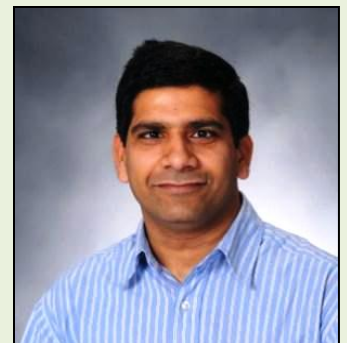
(14th - 16th, September 2016)

ABOUT THE DEPARTMENT

Being one of the oldest with its beginning in 1951, the department has been involved in areas of Structural Engineering, Soil Mechanics, Transportation Engineering, Hydraulics and Structures and Environmental engineering. The sponsored projects and consultancies undertaken by the department include Disaster Mitigation & Management, Analysis, Evaluation and Design of Highway and Airport pavements, Non-destructive Evaluation and Restoration of various structures such as building and bridges, Process Modifications for pollution mitigation, Ground Improvement and Sediment Transport and Scour studies.

ABOUT THE RESOURCE PERSON

Dr Brajesh Kr. Dubey is Associate Professor in the Division of Environmental Engineering and Management, Department of Civil Engineering at Indian Institute of Technology (IIT), Kharagpur, India. Dr. Dubey has more than a decade of research, teaching, training and industrial outreach experience in the areas of Integrated Solid and Hazardous Waste Management, Life Cycle Assessment (LCA) and Sustainable Engineering. He has collaborated with UN agencies, World Bank, National Science foundation, Ontario Ministry of Environment and Auckland Regional Council on various projects including that in the area of LCA. He has been resource person for LCA and delivered lectures at several universities in USA, Canada, New Zealand, China and India. He has also conducted training programs in the Integrated Waste Management areas including that for Electronics Waste. Dr. Dubey has authored/co-authored more than 160 publications in his area of expertise and have presented at several national and international conferences.



ABOUT THE WORKSHOP

This short term course will introduce participants to the fundamental concepts related to interaction of industrial and environmental/ecological systems, sustainability challenges facing the current generation, and systems-based approaches required to create sustainable solutions for society. The participants will understand the concepts and the scientific method as it applies to a systems-based, trans-disciplinary approach to sustainability, and will be prepared to identify problems in sustainability and formulate appropriate solutions based on scientific research, applied science, social and economic issues. The basic concepts of life cycle assessment (LCA) will be discussed, along with life cycle inventory (LCI) and life cycle impact assessment (LCIA) including the social and economic dimensions. The application of life cycle assessment methodology using appropriate case studies will be presented.

SPECIFIC OBJECTIVES

- To familiarize with and help understand multiple perspectives on the fundamental concepts in sustainability
- To help understand relationships among and limitations to disciplinary and trans disciplinary approaches to sustainability,
- To introduce general LCA methodology and hands on experience in its application,
- To Demonstrate use of a LCA tool and associated databases to support an LCA study
- To help appreciate the benefits and challenges associated with using LCA as a sustainability research tool

COURSE OUTLINE

TOPIC	DESCRIPTION
An Introduction to Sustainability	Introduction, The magnitude of sustainability challenge, Energy, Material use, Environmental emissions, economic and Social dimensions
Risk and Life Cycle Framework for Sustainability	Introduction, Risk, Life Cycle Frameworks, Life Cycle Assessment Tools
Life Cycle Analysis	Goal Definition, Life Cycle Inventory, Life Cycle Impact Assessment, Life Cycle Interpretation, Example LCA Software tools: Open LCA, SimaPro etc.
Green, Sustainable Materials	Introduction, Environmental and Natural Resource Use Footprints of Material Extraction and Refining, Tracking Material Flows in Engineered Systems, Environmental Releases
Design for Sustainability: Economic, Environmental, and Social Indicators	Introduction, Sustainable Engineering Design Principles, Economic Performance Indicators, Environmental Performance Indicators (LCA), Social Performance Indicators
Case Studies	Carbon Sequestration Projects, Composting Process Modifications, Sustainable Built Environment etc.

REGISTRATION AND ACCOMMODATION

CATEGORY	COURSE FEE	ACCOMMODATION
[A] Faculty Members and Students from TEQIP approved Colleges	Fee Waived off Rs 2000/- as Caution deposit (refunded on last day of workshop)	Sharing accommodation in TGH, IIT Kharagpur.
[B] Faculty Members and Students from Non-TEQIP colleges and professionals from industry)	Rs 5000/-	Booked on their specific request in TGH IIT Kharagpur, on direct payment basis

IMPORTANT INSTRUCTIONS

- A certificate of participation will be issued to all participants from the Office of “Dean, Continuing Education, IIT Kharagpur”.
- The course fee includes course materials, tea/coffee and snacks during lecture schedules only. This does not include travel, boarding and lodging.
- Travel support is not applicable to both categories.
- To confirm participation please send the scanned copy of the **Demand Draft/Wire Transfer confirmation** with filled application form to the coordinator by August 31st, 2016 positively.
- The participants will be selected on “First-Come-First-Served” basis out of the eligible applicants. Participants can pay the fees either by sending the demand draft (of the required amount) drawn in favour of “**CEP-STC, IIT Kharagpur**” payable at Kharagpur. The electronic transfer can be made by wire transfer as per the details below:

Name of the Account	CEP-STC, IIT Kharagpur
Banks Name	Syndicate bank
Branch Name	IIT Kharagpur
Account No. (as appearing on the cheque book)	95562200002955
IFSC Code (Indian Financial System Code for RTGS)	SYNB0009556
PAN Number	AAAJ10323G

IMPORTANT DATES

- ❖ Last date for receiving application : **31st August 2016**
- ❖ Intimation to applicants : 2nd Sep 2016
- ❖ Course duration : 14th to 16th September 2016

CONTACT DETAILS

Dr Brajesh Kumar Dubey (Coordinator)

Environmental Engineering and Management Division, Department of Civil Engineering

Indian Institute of Technology (IIT) – Kharagpur, 721 302

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Mobile: 9434205884, 9800121884

Email: eemiitkgp@gmail.com

HOW TO REACH IIT KHARAGPUR CAMPUS

Situated about 120 km west of Kolkata, Kharagpur can be reached in about 2 hrs. by train from Howrah railway station of Kolkata or 3 hrs. by car from Kolkata airport. Kharagpur is also connected by direct train services to most major cities of the country. The institute is about 10 minutes’ drive (5 km) from Kharagpur railway station. Private taxi or auto rickshaw can be hired to reach the Institute.



Three Day Short Term Course on
Introduction to Life Cycle Assessment: From Theory to Practical Applications
(September 14th – 16th, 2016)

REGISTRATION FORM

Name [Block Letters; Provide as appearing on your Institute or Official ID]					
Designation					
Institute/Organization Name					
Institute/Organization Address					
				Pin Code	
Category of Registration	A		B		
Highest Academic Qualification	B.Tech		M.Tech	Ph.D.	
Gender	Female		Male		
Address for Correspondence					
				Pin Code	
Mobile (Compulsory)					
E-Mail (Compulsory)					
Accommodation required	Yes		No		
Bank Details for Demand Draft					
Bank Name		Bank Draft No		Date	

Signature of the Participant (with date)

Note: Students should provide a bonafide certificate/ID Card photocopy at the time of registration

Approval for TEQIP Category Candidates

Ours is a TEQIP II institute. The above applicant is a faculty/Student/Staff of our organization. He/she is recommended for the course during September 14-16, 2016 at IIT Kharagpur.

Signature of the Head of the organization with seal	
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DEPARTMENT OF CIVIL ENGINEERING::INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR
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