

SEANNEWS



Centre of Excellence in Safety Engineering and Analytics
(CoE-SEA)
IIT Kharagpur

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Issue 2
2022

16-week certificate course for the officials of Adani Group Inauguration of 1st batch of LPSE

CoE-SEA is organizing a 16-week certificate course on "*Logistics and Process Safety Engineering (LPSE)*" for the officials from different business units of Adani Group. The course was successfully completed for the first batch with 25 participants from the Adani Group, which commenced on August 1, 2022 and ended on November 18, 2022. The course was inaugurated by Prof. V K Tewari, Director, IIT Kharagpur, along with Mr. Karan Adani, Whole Time Director & CEO, Adani Ports and Logistics Business, Mr. Anil Sardana, MD & CEO (Energy Business), Group Service Head (Safety & BE), Co-Chair, Apex Safety Council, Mr. Birendra Kumar Verma, Joint President & Head of Group Safety, Adani Group and Prof. Debjani Chakraborty, Associate Dean, Outreach, IIT Kharagpur as the guests of honor.

The course was designed on "Project-Based Learning Methodology (PBLM)" where the participants were given inputs in the classroom through lectures, tabletop exercises, and case studies on various topics like process safety, logistics safety, safety analytics, hazard identification and control, quantitative risk management, micro-hazard mapping and bow-tie management, energy control, addressing safety issues using PtD, ergonomics, etc. These learnings were then implemented at the company sites through project works by the participants with the help of mentors and review by the Course Coordinators.



Inauguration of the course LPSE by the Chief Guest Prof. V K Tewari, Director, IIT Kharagpur



Mr. Karan Adani, Whole-time director and CEO, Adani Ports & Logistics addressing the gathering during the inaugural ceremony of the course LPSE



Mr. Anil Sardana, MD & CEO (Energy Business) Group Service Head (Safety & BE), Co-Chair, Apex Safety Council addressing the gathering during the inaugural ceremony of the course LPSE

Success story of 1st batch of LPSE

The course was successful in imparting the concepts, principles and procedures of design for safety, integrated safety management, and safety analytics. The sessions were highly interactive and was well appreciated by the participants. The course structure and conduct was appreciated by IIT professors, other academicians, guest lecturers, Adani leaders, etc.

"After this course, the participants are talking more about safety, hazards, risks, and interventions."

Birendra Kumar Verma
Joint President & Head
Group Safety, Adani Group

Dear CoE-SEA team,

I wanted to take a moment to express my gratitude and appreciation for the amazing training session on LPSE. Your expertise and knowledge on the subject matter were truly outstanding, and it was evident that you had invested a great deal of time and effort in preparing the materials and delivering the content in clear and concise manner. Throughout the training, I found myself engaged and motivated to learn more about the topics. The activities and exercises incorporated were not only informative but enjoyable and very much helpful. I feel much more confident and equipped to apply what I learnt in this training to my work.

Ashrut Gupta (participant)
Adani Power Rajasthan Ltd.



Few snapshots during the classroom lectures, table-top exercises, group discussions and presentations

Weekend Talks

On Safety Engineering, Management & Analytics (SEMA)

WEEK
44

Dr. Jyoti Mukherjee, Reliability and Design Consultant for machine tools delivered his talk on “*Safety design for production equipment*”, on 01st April 2022.

Click here to watch the talk: [Link](#)

WEEK
52

Dr. Cristian Maluk, Senior Lecturer, School of Civil Engineering, University of Queensland, Australia presented a talk on “*Quick...Get me a fire engineer*” on 27th May 2022.

WEEK
45

Prof. Nikhil Bugalia, Assistant Professor, Civil Engineering Department, IIT Madras discussed on “*Overview of the Accidents in Japanese Shinkansen and Future Risk-Management of High-Speed Railway safety in India*” on 08th April 2022.

WEEK
54

Mr. Suresh Tanwar, Head, Audit & Consultancy, British Safety Council, India discussed “*Prevention of recurrence of serious incidents – An important focus for the organizations*” on 03rd June 2022.

WEEK
53

Click here to watch the talk: [Link](#)

WEEK
46

Prof. Prabhakar V Varde, Senior Professor Homi Bhabha National Institute, RRF, BARC, Mumbai spoke on “*Risk-conscious operations management*” on 15th April 2022.



Click here to watch the talk: [Link](#)

WEEK
54

Dr. Nicola Paltrinieri, Professor, NTNU, Norway spoke on “*Are big data taking industry towards “no-brainer” safety management?*” on 10th June 2022.



Click here to watch the talk: [Link](#)

WEEK
47

Larry Wilson, CEO and author, SafeStart shared his experience and expertise on the topic “*Defenseless moments*” on 22nd April 2022.

WEEK
56

Mr. Anurag Saxena, Chief of Electrical Maintenance, Tata Steel Limited discussed “*Electrical Safety in Steel Plants—With Specific reference to Tata Steel Jamshedpur Works*” on 17th June 2022.



Click here to watch the talk: [Link](#)

WEEK
55WEEK
48

Prof. Nirjhar Dhang, Professor, Dept. of Civil Engineering, IIT Kharagpur delivered a talk on “*Structural health monitoring*” on 29th April 2022.



Click here to watch the talk: [Link](#)

WEEK
56

Prof. Bhargab Maitra, Professor, Dept. of Civil Engineering, IIT Kharagpur delivered a talk on “*Enhancing road safety- The safe system approach*” on 24th June 2022.



Click here to watch the talk: [Link](#)

WEEK
49

Dr. Prateek Bansal, Assistant Professor, NUS spoke on “*Advanced Spatial Count Data Models for Accident analysis and their applications*” on 06th May 2022.



Click here to watch the talk: [Link](#)

WEEK
58

Mr. Kevin Chothani, Head – Safety, Health & Environment, Sekura Energy Limited spoke on “*Incident investigation techniques with case studies*” on 01st July 2022.



Click here to watch the talk: [Link](#)

WEEK
57WEEK
50

Dr. Tristan Casey, Senior Lecturer, Middlesex University, London delivered a talk on “*Making sense of safety culture: Identifying common themes and moving forward*” on 13th May 2022.



Click here to watch the talk: [Link](#)

WEEK
58

Prof. Bhubuti B Mandal, Associate Professor, Dept. of Mining Engineering, IIT Kharagpur discussed on “*Occupational health research in Indian mines*” on 08th July 2022.



Click here to watch the talk: [Link](#)

WEEK
51

V. Narasimhan, Senior Industrial Safety Consultant, Narasimhaan Safety Consultancy spoke on “*Process Safety Management*” on 20th May 2022.



Click here to watch the talk: [Link](#)

WEEK
58

Rajender Dahiya, Sr. Process Safety & Risk Control Expert, USA spoke on “*Why do we keep repeating major accidents*” on 15th July 2022.



Click here to watch the talk: [Link](#)

WEEK
59

WEEK
60

Prof. Seema Unnikrishnan, Professor, NITIE, Mumbai shared her expertise on “*Safety & environmental compliance for industry*”, on 22nd July 2022.

WEEK
69

Mr. Harikumar A, CEO, Udipi Cochin Shipyard Ltd., Karnataka presented a talk on “*Safety at work- A production man’s view*” on 23rd September 2022.
Click here to watch the talk: [Link](#)

WEEK
61

Mr. Agam Kumar, Chief Safety Officer, Tata Steel BSL, Odisha discussed on “*Contractor safety management - Case studies from Tata Steel*” on 29th July 2022.

WEEK
62

Ms. Mom Mitra, Safety Manager, Tata Steel Limited (Operations) talked through “*PPE: Holistic solutions as the last line of defense in industry*” on 05th August 2022.
Click here to watch the talk: [Link](#)

WEEK
71

Dr. Sobhan Sarkar, Assistant Professor, IIM Ranchi delivered a talk on “*Data analytics approach for safety management- A case of a steel plant*” on 07th October 2022

WEEK
63

Dr. Abhishek Verma, Assistant Professor, IIM Rohtak spoke on “*Powering workplace safety with analytics*” on 12th August 2022.
Click here to watch the talk: [Link](#)

WEEK
64

Mr. S Gopa Kumar, MD, Cape Electric discussed on the topic “*Electrical safety and fire due to short circuit*” on 19th August 2022.
Click here to watch the talk: [Link](#)

WEEK
73

Dr. Babu Jose, General Manager (Operations), FACT Ltd, Kerala talked through “*Disaster management challenges in chemical industry*” on 21st October 2022.
Click here to watch the talk: [Link](#)

WEEK
65

Prof. Jim Milke, Professor & Chair, Dept. of Fire Protection Engineering, University of Maryland spoke on “*Risk-informed fire protection solutions*” on 26th August 2022.
Click here to watch the talk: [Link](#)

WEEK
66

Mr. Dip Narayan Koner, Head, Contractor safety, Tata Steel Ltd. discussed on “*Safety Leadership Development Centre at Tata Steel*” on 02nd September 2022.
Click here to watch the talk: [Link](#)

WEEK
75

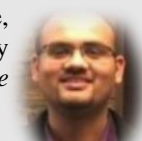
Prof. Lora Cavuoto, Associate Professor, Dept. of Industrial & Systems Engg, University of Buffalo, USA shared her expertise on “*Stratergies for identifying & monitoring fatigue in the workplace*” on 04th Nov 2022.

WEEK
67

Prof. Khanindra Pathak, Professor, Dept. of Mining Engineering, IIT Kharagpur shared his expertise on “*Planning and designing safety in mechanized mining systems*” on 09th September 2022.

WEEK
68

Dr. Tauseef Zia Siddiqui, Senior Corporate, Environment, Climate change & Sustainability Professional, Qatar talked through “*Importance of human performance in safety*” on 16th September 2022.
Click here to watch the talk: [Link](#)

WEEK
76

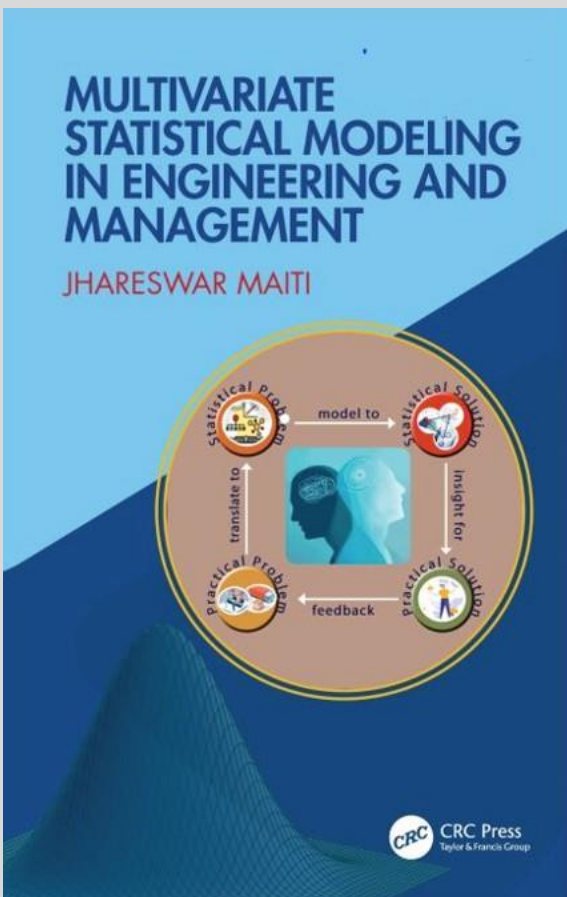
Prof. Srinivas S Pulugurtha, Professor & Research Director, Civil & Environmental Engg, University of North Carolina, USA delivered a talk on “*Crash frequency prediction models*” on 11th Nov 2022.



The event was conducted under ‘Azadi Ka Amrit Mahotsav’ celebrating 75 years of India’s Independence. The weekend talk series was concluded with the success of 76 weeks. We will be coming up with another series of interesting and informative talks with eminent speakers to impart knowledge on the “Advancements in Safety Engineering, Management, and Analytics”.

Achievements

Prof. Jharieswar Maiti, Chairman, Centre of Excellence in Safety Engineering and Analytics (CoE-SEA), IIT Kharagpur and Head of the Department, Department of Industrial and Systems Engineering, IIT Kharagpur has been conferred with the prestigious "*Suresh and Vidya Nair Chair Professor*" award by IIT Kharagpur on the occasion of its 72nd Institute Foundation Day on 18th August, 2022 at IIT Kharagpur. Dr Suresh Nair and his wife Mrs Vidya Nair have funded this award with the main objective to encourage practice-based research and industrial collaborations.



The Centre is proud to share the latest book on "*Multivariate Statistical Modelling in Engineering and Management*", authored by Prof. J Maiti, and published by CRC Press/Taylor & Francis Group.

The book focuses on problem solving for practitioners and model building for academicians in multivariate situations. This book assists readers in understanding the issues, such as knowing variability, extracting patterns, building relationships, and making objective decisions. A large number of multivariate statistical models are covered in the book. The book features conceptual models and approaches linking theories and practises; a step-by-step procedure for estimating parameters of developed models; and a blueprint for data-driven decision-making. The book is a perfect reference for anyone involved in data-driven problem solving, statistical modelling, and decision-making. The readers will learn how a practical problem can be translated in to a statistical problem and how the statistical solution can be converted as a practical solution.

Book is available at <https://lnkd.in/dUvFAqFW>

DOI: <https://doi.org/10.1201/9781003303060>

Key Projects

- AI and virtual reality modeling and collaborative learning of risk and situational awareness in the socio-technical system under disruptions (*DST*).
- Evaluation of District Skill Development Planning (*DSDP*) awards, Ministry of Skill Development and Entrepreneurship (*MSDE*).
- Evaluation of human factors and safety in the submersible platform for acoustic characterization and evaluation, *Naval Physical Oceanographic Laboratory (NPOL), DRDO, Kochi*.
- Centre of Excellence in Safety Engineering and Analytics, (*Institute*).
- Development of prediction-based OSMS and Virtual accident modeling, *Haldia Petrochemicals Limited*.

Publication Watch

- A novel classification approach based on context connotative network (CCNet): A case of construction site accidents.
<https://doi.org/10.1016/j.eswa.2022.117281>
- An integrated TRIZ coupled safety function deployment and capital budgeting methodology for occupational safety improvement: A case of manufacturing industry.
<https://doi.org/10.1016/j.psep.2022.06.067>
- Traffic Anomaly Detection and Video Summarization Using Spatio-Temporal Rough Fuzzy Granulation with Z-Numbers.
<https://doi.org/10.1109/TITS.2022.3198595>

On-going Outreach

- Certificate course on “*Logistics and Process Safety Engineering (LPSE)*” for the 2nd batch of Officials from Adani Group.

Feedbacks

Reach us

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File No. NPOL/247/008/CARS/IIT Kgp

20th Dec 2022

To

Prof. (Dr.) Jhanswar Maiti
Head
Dept. of Industrial & Systems Engg.
IIT Kharagpur

Sub: CARS Project on "Evaluation of Human Factors and Safety in Submersible Platform for Acoustic Characterisation & Evaluation"


Dear Sir,

I am glad to note that two of the major milestones of the subject CARS project have been completed successfully at the Centre of Excellence in Safety Engineering and Analytics (CoE-SEA), IIT Kharagpur.

2. The project team at NPOL had recently presented details of the work to our external project review committee. The use of Virtual Reality tools in simulating real conditions and evaluating safety parameters from the basic principles was highlighted. I am happy to inform you that the committee and technical experts unanimously appreciated the work being carried out and went on to say that this is a model to be emulated in future projects too. The industry also acknowledged the fact that this is a new approach which was hitherto not actively considered in conventional ship design, and that this exercise provided them with huge insights into the safety and ergonomics aspects in the design stage itself.

3. I look forward to successful completion of the balance milestone in the days to come, and expect to see the recommendations implemented in the state-of-the-art facility that we are establishing.

With warm regards,


Sameer Abdul Azeem, Sc-F
Project Director (SPACE)