

Overview of Course

Ergonomics is the science and art of fitting the job and the workplace environment to the worker or employee's needs. Ergonomics and safety risks include overexertion, repetitive motion, slips, trips, and falls at work. Increasing awareness of ergonomics and workplace safety benefits many industries, but in industrially developing countries like India, such training is still lacking. A well-trained but healthy workforce is critical to India's global competitiveness growth. This programme will help our industrial workforce and students with the latest research and best work practices in ergonomics and safety. Using interactive sessions and hands-on tutorials, this course will also enable participants with practical tools to use in the workplace.

Course Objectives

The primary objectives of the course are to:

- ❖ Educate participants from a variety of educational backgrounds and industry sectors to the latest and established research and practice methodologies in ergonomics and safety;
- ❖ Provide participants with the emerging trends and tools in ergonomics and safety (including hands-on tutorials) to accomplish their job responsibilities in industry sectors such as Manufacturing, Automotive, Distribution, Construction, Mining, and Healthcare; and
- ❖ Enhance participants' ability to find solutions for their workplace ergonomics- and safety-related problems, and implement a successful ergonomics and safety program at their workplace.



About GIAN Program

The Ministry of Human Resource Development, Government of India has launched program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence. GIAN program facilitates participation of high-quality international academicians/researchers for delivering short-term courses and programs in Indian institutions. More details on various GIAN courses are available at <http://www.gian.iitkqp.ac.in/>

About the Institute

Dr B R Ambedkar National Institute of Technology was established in the year 1987 as Regional Engineering College and was given the status of National Institute of Technology (Deemed University) by the Government of India on October 17, 2002 under the aegis of Ministry of Human Resource Development, New Delhi. The Ministry of Human Resource Development, Government of India has declared the Institute as 'Institute of National Importance' under the act of Parliament-2007. The Institute offers B Tech, M Tech, M Sc, MBA and Ph D programs in several disciplines of Engineering, Science & Technology, and Management.

About the Department

Industrial and Production Engineering is emerging as a specialized branch of Mechanical Engineering with an objective of enabling engineers to improve efficiency and effectiveness of both manufacturing and service sector Industries. Its Alumni are occupying eminent positions in industries, research and academic institutions in India and abroad. Department is presently offering PhD in all relevant streams, two PG course in Industrial Engineering and Manufacturing Technology, along with UG course in Industrial and Production Engineering and one minor degree in Industrial Engineering.



Global Initiative on Academic Networks (GIAN) Program

EMERGING TRENDS AND CONTEMPORARY TOOLS FOR RESEARCH AND PRACTICE IN ERGONOMICS AND SAFETY (ETRPES)

(Online Mode)

March 11-15, 2022

Department of Industrial and Production Engineering

Dr B R Ambedkar National Institute of Technology, Jalandhar 144011. Punjab. India

**International Faculty
Rammohan V. Maikala, PhD**

Subject Matter Expert – Program Technical Consultant, National Safety Council, IL, USA

**Chief Patron
Shri. S C Ralhan (Chairman BOG)**

**Patron
Prof. B K Kanaujia (Director)
Prof. R K Garg (HAG)**

**Co-Patron
Prof. Arvind Bhardwaj (HAG)
Dr. Rajeev Trehan (HOD)**

**Program Coordinators
Dr. Lakhwinder Pal Singh
Dr. Kapil Kumar Goyal**

**Local GIAN Coordinators
Dr. Rajneesh Rani
Dr Shish Ram**

Programme Registration Process

Step-1:

One time Web (Portal) Registration: Visit GIAN Website at the link:

<https://gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password.

Fill up the blank registration form and do web registration by paying ₹500 online through Net Banking/Debit/Credit card. This provides him/her with life time registration to enroll in any number of the GIAN courses offered.

Step-2:

Course Registration (Through GIAN Portal): Log in to the GIAN portal with the user ID and Password created. Click on "Course Registration" option given at the top of the registration form. Select the Course titled 'EMERGING TRENDS AND CONTEMPORARY TOOLS FOR RESEARCH AND PRACTICE IN ERGONOMICS AND SAFETY (ETRPES)' from the list and click on 'Save' option. Confirm your registration by Clicking on 'Confirm Course'.

Step-3:

After GIAN Registration the Course fee is to be deposited online in the institute account:

Students/Research Scholars	:	₹ 200
Faculty/Staff of Academic Institutions	:	₹ 500
Industry/Research Organizations	:	₹ 1000
Participants from abroad	:	USD 50
Including 18% GST		
Last Date of Registration: March 7, 2022		

The program fee covers only course materials and access to all the sessions.

Payment of Programme Fee

Participants should pay registration fee through online mode (NEFT/IMPS), and fill up transaction ID/details in the google form with the link and the account details given below;

https://forms.gle/unbeNXDyMfScYLuz5jQGR8TIwfwOg/viewform?usp=sf_link

Account Detail for NEFT:

Bank Name	Canara Bank
Account Name	Global Initiative on Academic Networks (GIAN)
Account Number	2945101004688
IFSC Code	CNRB0002945
SWIFT	CNRBINBBBMC

Step-4:

After online payment of registration fee, fill the google form with link given below

Registration Link

<https://forms.gle/unbeNXDyMfScYLuz5>

All the participants must register before March 7, 2022 along with mentioned details in google form.

The course will be held through online mode via google meet/zoom, the link will be circulated by 9th March.

Who can attend:

Occupational Safety and Health Executives, Researchers from Government Institutions and Laboratories, Healthcare Executives, Industrial Engineers, Physical and Occupational Therapists, Occupational Health Nurses, and Health and Safety Inspectors, Safety Engineers. Faculty from other Engineering and Medical Colleges and Technical Institutions.

Students at all levels (Engineering – Undergraduate, Post-graduate, and Post-Doctoral Students; Physical and Occupational Therapy - Undergraduate, Post-graduate; Occupational Medicine and Occupational Nursing Students).

Registration Form

EMERGING TRENDS AND CONTEMPORARY TOOLS FOR RESEARCH AND PRACTICE IN ERGONOMICS AND SAFETY (ETRPES)

(Online mode)

March 11-15, 2022

Dr B R Ambedkar National Institute of Technology Jalandhar

Name :

Designation :

Department :

Organization :

Address for Correspondence :

Email ID :

Mobile Number :

Field of Specialization :

Experience (in years) :

Details of Fee Paid (Online Transaction ID) :

Signature of the Applicant with date :

Recommendations of the Sponsoring Authority

The applicant is hereby sponsored for GIAN Program on Emerging Trends and Contemporary Tools for Research and Practice in Ergonomics and Safety and will be permitted to attend if selected.

Signature and Seal of the Sponsoring Authority

International Faculty

Rammohan V. Maikala, PhD
Subject Matter Expert – Program
Technical Consultant
National Safety Council, IL, USA
Email:
Rammohan.maikala@providence.org
Phone: 1-971-330-7051



Editor-in-Chief, Ergonomics in Design
Editor, International Journal of Industrial Ergonomics

Biography:

Dr. Rammohan Maikala is a Subject Matter Expert – Program Technical Consultant with National Safety Council. He recently worked as an Injury Prevention and Ergonomics Program Specialist at Providence Regional Medical Center in Everett, Washington. At Providence, Ram taught and trained safe patient handling and mobility to hospital staff, developed and provided ergonomics and safety risk assessments of the hospital and clinical environments, and developed interventions to mitigate injuries. For almost two decades, Ram's research focused on Work Physiology and Human Performance using various non-invasive physiological modalities, including Near-Infrared Spectroscopy (NIRS); this effort, in turn, led to the first peer-reviewed special issue on Applications of NIRS in Ergonomics and Exercise-related research. In addition to being the Technical Standards Division Chair of the Human Factors and Ergonomics Society, USA, Ram is the Chair of the US Technical Advisory Group - Ergonomics of Human-System Interaction [ANSI/HFES to ISO Technical Committee (TC) 159-Ergonomics/Subcommittee (SC) 4], and a voting member of SC3 - Anthropometry and Biomechanics [ANSI/HFES to ISO TC 159]. Ram has a Doctoral degree in Rehabilitation Science from the University of Alberta, Edmonton, Canada, Masters in Industrial Engineering with special emphasis on Ergonomics and Safety Engineering from West Virginia University, Morgantown, West Virginia, and Bachelors in Mechanical Engineering from Osmania University, India.

Program Coordinator

Dr. Lakhwinder Pal Singh

Associate Professor
Department of IPE, Dr B R Ambedkar NIT,
Jalandhar (Punjab)-144011, India
Ph: +918288947954, Email: singhl@nitj.ac.in



Biography:

Dr Lakhwinder Pal Singh obtained his B Tech in 1999 from REC (NIT) Jalandhar and M Tech in 2006 and PhD in 2012 from NIT Jalandhar, Punjab (India). He has more than 21 years of experience in teaching and research. He has published more than 55 papers in national and international journals and 60 papers in conferences and contributed several book chapters and six books including Work study and Ergonomics (Cambridge University Press-Global level). His areas of research interest are Ergonomics and Human Factors Engineering, Occupational Health and Safety, Lean manufacturing, Operations, and Supply Chain management. He has guided 35 M Tech and 6 PhD and 03 in-processes. He has filed 10 IPRs (05 Patents, 04 Designs, 01 Copyright) 04 IPR granted. He has life and executive member of various society including ISE, ISTE, GIFT, IIIE, IEI, APPI, and IANG. He has organized six international conferences and more than 30 STC/FDP/workshops etc. He has handed number of R&D/consultancy projects, and delivered many lectures at various national and international events. He has received best teacher award in year 2018-19 along with other recognition awards of national/international levels. He is reviewer and member of editorial board of various international journals including industrial ergonomics.

Dr. Kapil Kumar Goyal

Assistant Professor
Department of IPE, Dr B R Ambedkar NIT,
Jalandhar (Punjab)-144011, INDIA
Ph:+918059000377,Email: goyalkk@nitj.ac.in



Biography:

Dr. Kapil Kumar Goyal has obtained his BE in 1999 from NIT Kurukshetra and MTech from NITTTR Chandigarh, India. He did PhD from IIT Roorkee. He has 18 years of teaching experience and 6 Years of Industrial Experience. He has more than 40 publications in reputed international journals. His research interests include Evolutionary algorithms, Multiple objective optimizations, Neural Networks, Decision Sciences, Manufacturing systems and processes planning & optimization. He has delivered expert lectures in the various institutes, including IITs, NITs and has chaired international /national conference sessions. He is also serving as editor on the board of various international journals and also acting as a reviewer in various reputed international journals.

Tentative Contents and Schedule

Day 1: 4 Lecture Hours + 1 Tutorial Hours

Topic cover: Introduction to Work Physiology and Neuroergonomics, Influence of Aging and Obesity on Work and Fatigue, Energy Expenditures, Cardiorespiratory Responses, Neuroergonomics, Near-infrared spectroscopy and Applications in Ergonomics; Energy Expenditure Models, Heart Rate and Heart Rate Variability

Day 2: 2.5 Lecture Hours + 2 Tutorial Hours

Topic cover: Emerging Trends in Ergonomics and Safety - Exoskeletons and Augmented/Virtual Reality, Exoskeletons - History, Safety, and Ergonomics, Virtual/Augmented Reality - Ergonomics and Human Factors (RM), Introduction to Job Evaluation Methods - I, Upper Extremity disorders and Exposure Analysis; Revised NIOSH Lifting Equation, Strain Index for Upper Extremity

Day 3: (4 Lecture Hours = 4 Hours)

Topic cover: High-Reliability Organizations and Safety Culture, Healthcare Industry as a High-Reliability Organization, Human Error and Patient Safety, Hazard Recognition and Mitigation strategies in Healthcare, Injury Prevention - MSDs and Role of Anthropometry in Design

Day 4: (3 Lecture Hours + 1.5 Tutorial Hours)

Topic cover: Selected Topics in Ergonomics and Safety - Potpourri, Hospital Ergonomics, Office Ergonomics and Work from Home, Total Worker Health; Emerging Ergonomics Assessment Tools

Day 5: (3.5 Lecture Hours + 2 Tutorial Hours)

Topic cover: Introduction Environmental Ergonomics, Light; Noise, Heat and Cold Stress, Whole-body vibration, Introduction to Job Evaluation Methods; - II, Work posture analysis using OWAS, RULA, REBA tools, Evaluating work using RULA, REBA and other New Methods.