

IEOM Global Engineering Education

Readiness and Competence of Engineering Graduates

ENGINEERING EDUCATION IN AMERICAS

IEOM Society addresses the issues of Global Engineering Education. There are different levels of readiness of engineering graduates from various parts of the world. One of the main themes of this series is how to reduce the readiness gap around the world. The special focus is given to Industrial Engineering, Service Engineering, Manufacturing Engineering, Systems Engineering, Operations Research, Engineering Management and Technology Management. Are the engineering graduates ready to take on the challenges of the current global economy? With the great success of Global Engineering Education Series of last IEOM conferences, 2015 IEOM Orlando Conference will have a dedicated session for the Global Engineering Education where distinguished speakers will discuss the readiness of engineering graduates for workforce around the world. A special focus will be given for the [Engineering Education in Americas](#).

DISTINGUISHED SPEAKERS

September 10, 2015 (Thursday)

08:00 – 09:15 Global Engineering Education I (Thursday) - Salon 5

Session Chair: Dr. Laura M. Stanley, Montana State University

8:00 – 8:25 am



Laura M. Stanley, PhD, CPE

Associate Professor

Mechanical & Industrial Engineering Department

Montana State University

Bozeman, MT, USA

Addressing the Need for Effective Communications across the Engineering Curricula – A Case Study

Abstract: The development of written and oral communication skills is of growing importance for undergraduate engineers of all disciplines. These are skills that cannot be learned in a single technical writing course; rather they must be reinforced throughout an entire curriculum. One engineering department at Montana State University has proposed the Engineering Communications Toolkit to aid in the development of communications skills among its students. This Toolkit was distributed to freshman through senior-level students in four different courses. Following a semester of use, students and faculty member were asked to assess the Toolkit's effectiveness. Overall, the Toolkit was well received as a communications resource. Both students and faculty indicated that they would use the resource in future courses. With continued support, the Toolkit is to be integrated throughout the school's engineering curricula to help produce graduates who are better communicators and, thus, more competitive in the workforce.

Bio: Dr. Laura Stanley is an Associate Professor in the Mechanical & Industrial Engineering Department at Montana State University and a Research Scientist at the Western Transportation Institute, where she is the Director of the Human Factors Driving Laboratory. Dr. Stanley has a B.S. in Industrial & Systems Engineering from Virginia Tech, M.S. and PhD in Industrial Engineering from Montana State University. Dr. Laura Stanley was recently selected as Program Director in the Directorate for Computer & Information Science & Engineering (CISE) at the National Science Foundation. Dr. Stanley will begin her NSF service beginning fall of 2015.

Dr. Stanley's research interests include Human Factors, Transportation Safety, Learning in Virtual Environments, Human Computer Interaction, and Engineering Education. Her projects while at MSU have included the validation of virtual reality environments, human computer interaction applications, naturalistic driving evaluations in the emergency medicine service environment, improving novice and older driver safety, and the evaluation of the safety benefits of driver based public health interventions. She has collaborated with several outside partners, some of which include: the National Science Foundation, National Highway Traffic Safety Administrations, Montana Department of Transportation, Bozeman Deaconess Hospital, Montana's Office of Public Instruction, Virginia Tech Industrial & Systems Engineering Department, Engineering Information Foundation, Murdock Charitable Trust Foundation, Critical Illness & Trauma Foundation, American Medical Response, and the Texas

Transportation Institute. Furthermore, Dr. Stanley has conducted research on engineering education, specifically how to better integrate service learning applications and communication needs of our nation's future engineers.

Dr. Stanley currently serves as Associate Editor for IEEE Transactions on Human-Machine Systems and serves on the scientific review committees for the Journal of the American Academy of Pediatrics, Accident Analysis & Prevention Journal, Journal of the Human Factors & Ergonomics Society, and Transportation Research Board.

Dr. Stanley is a strong proponent for the undergraduate research experience, as such she has advised several undergraduates in research projects through formal programs such as the McNair Scholars Program, the National Science Foundation Research Experience for Undergraduates program, the United States Department of Transportation's Undergraduate Research Experience, MSU's Undergraduate Scholars Program, MSU University Honors Program, Montana Native American Apprenticeship Program, and for independent study credit. Additionally, Dr. Stanley believes in supporting a diverse workforce through the advancement of women and minorities in engineering. She currently serves as one of MSU's NSF Equity Advocates and participates in local outreach programs for girls in math and science programs.

8:25 -8:50 am



Nadia Bhuiyan, Ph.D., Eng., Professor
 Department of Mechanical and Industrial Engineering
 Associate Director, Concordia Institute of Aerospace Design and Innovation (CIADI)
 Concordia University
 Montreal, Quebec, Canada

Bio: Dr. Nadia Bhuiyan is Professor at the Department of Mechanical and Industrial Engineering, Concordia University, Montreal, Quebec, Canada. He is an Associate Director, Concordia Institute of Aerospace Design and Innovation (CIADI). Dr. Bhuiyan received her B.Eng. in Industrial Engineering at Concordia University, and her M.A. Sc. and Ph.D. both at McGill University in Mechanical Engineering. She was an Assistant Professor at Queen's School of Business and a lecturer at McGill University in Management Science. She became the Associate Director of CIADI in 2003. Dr. Bhuiyan has a number of industrial collaborations with aerospace companies such as Pratt & Whitney Canada, Bombardier Aerospace, Bell Helicopter, and CMC Electronics, and is involved in several CRIAQ (Consortium for Research and Innovation in Aerospace in Quebec) projects, most recently in Lean Engineering. She works closely with the aerospace industry in Montreal to research and develop tools and techniques in lean and to study their application across the enterprise. Dr. Bhuiyan's research interests focus on product development processes, dealing with the design, development, production, and distribution of goods and services, with a focus on emerging tools and techniques for integrating design and manufacturing to improve process performance. She is currently conducting research on the application of lean manufacturing principles in product development.

8:50 – 9:15 am



Shahram Taj, Ph.D.
 Professor
 Chair, Department of Management and Marketing
 College of Management
 Lawrence Technological University

Biography: Dr. Shahram Taj is Professor and Chair of the Department of Management and Marketing at Lawrence Technological University in Michigan. He is an accomplished academician, executive consultant, and with an expertise in business model innovation, lean and sustainable operations, strategic management, production systems design, systems optimization/simulation, and supply chain management.

Dr. Shahram Taj was the Cameron Endowed Chair of Management and Marketing at the University of St. Thomas in Houston from 2008 to 2013. He previously taught at the University of Detroit Mercy from 1987 to 2008 and earned the University of Detroit Mercy President's Award for Faculty Excellence. He also taught in the Global Entrepreneurial MBA Program at Fu Jen Catholic University in Taiwan from 2004 to 2006 and was a visiting professor at Peking University in China teaching in the Beijing International MBA Program in 2004. Dr. Taj also taught at Baruch College, The City University of New York (the largest business school in the United States) from 1984 to 1987.

Dr. Taj has developed several world-class graduate programs such as the MS in Product Development in collaboration with Massachusetts Institute of Technology (MIT), Ford, Xerox, and the National Science Foundation. He also developed graduate degree programs in Software Engineering, EMBA, and Supply Chain/Transportation Efficiency Systems (funded by the U.S. Dept. of Transportation) at the University of Detroit Mercy.

Dr. Taj has conducted over 100 projects at Ford, Visteon, New Venture Gear (formerly joint venture of GM and DaimlerChrysler), GM-Holden, Baker Hughes, and Schlumberger in the United States, Germany, Australia, and Japan. The projects have covered productivity improvements, implementing lean manufacturing, and optimizing process design. In 1999, he earned the Franz Edelman Finalist Award for Achievement in Operations Research/Management Science. The award was based on projects that resulted in \$15.5 million capital savings and a profit increase of over \$2 billion for Ford Motor Company. From 1998 to 2000, Shahram worked directly with the executive Vice President of Worldwide Operations of the New Venture Gear Company in designing a new lean automotive manufacturing plant in Germany to supply powertrain to

Porsche Cayenne and Volkswagen Touareg that resulted in savings of \$21 million. From 2009 to 2010, Dr. Taj served as an Executive Technical Advisor to executives in the new worldwide Supply Chain and Manufacturing Division at Baker Hughes in Houston.

Shahram also collaborated with the Production System Design Laboratory at MIT conducting research in the design and the implementation of "lean production systems" in the automotive industry in the U.S. and Europe from 1996 to 2000. Dr. Taj has served as Thesis Advisor/Reader of over 100 graduate students at UDM including a doctoral thesis committee at MIT. He served as the track chair of the "Lean Manufacturing, Manufacturing Information Management, Supply Chain, and Product Development" for the SAE International in Ireland, Spain, and France. He has published over 60 refereed articles in journals and proceedings of many international conferences. Recently, he published several articles on the adaptation of lean production in China and Bank Efficiency in Turkey.

Shahram earned his Ph.D. in Industrial Engineering and Operations Research from the University of Massachusetts (1984). He has a MS degree in Industrial Engineering from the University of Rhode Island (1980) and a BS in Applied Mathematics/Operations Research from the School of Planning and Computer Applications in Tehran (1977).

09:30 – 10:00 Welcome Address

10:00 – 11:00 Opening Keynote: Dr. Pamela McCauley, Professor, Department of Industrial Engineering and Management Systems and Director, Human Factors in Disaster Management Research Team, University of Central Florida, USA

11:00 – 11:30 Networking Break

11:30 – 12:45 Global Engineering Education II (Thursday) – Salon 5

Session Chair: Dr. Kit Fai Pun, University of the West Indies

11:30 – 11:55 am, Thursday



Dr. Kit Fai Pun

Professor of Industrial Engineering
Campus Coordinator and Chair, Graduate Studies & Research
School for Graduate Studies & Research
Department of Mechanical and Manufacturing Engineering
Faculty of Engineering
The University of the West Indies
St Augustine Campus, Trinidad and Tobago

Exploring Industrial Engineering and Education: From Illustrated Cases to Best Practice of Graduate Research Supervision

Abstract: Industrial Engineering (IE) is a people-oriented, customer-oriented engineering discipline. It emerged as a profession that comprehends knowledge and skills in applying scientific analysis, technical design, management techniques, financial appraisal and human relations principles in order to improve quality, productivity, investment and human development in operations. This presentation is of two-folds. It will firstly explore the versatility of IE in building competence in firms and industries with illustrated cases. It then discusses the challenges of graduate research in IE as well as the best practice of graduate student supervision in universities.

Bio: Dr. Kit Fai Pun joined The University of the West Indies (UWI), Trinidad and Tobago as a Senior Lecturer in 2001 and became a Professor of Industrial Engineering (IE) in 2004. He has been serving as the coordinator of IE research group and programmes in the Department of Mechanical and Manufacturing Engineering since 2001, and is presently the Deputy Dean of Research and Postgraduate Student Affairs of the Faculty of Engineering.

Before joining UWI, he held several academic positions at City University of Hong Kong, and worked in industry as operations executive, researcher, engineer and consultant in Hong Kong and the UK. Professor Pun is a Chartered Engineer and a Chartered Marketer in the UK, as well as a Registered Professional Engineer in Europe, Australia, Hong Kong, and The Republic of Trinidad and Tobago. He is a member of Caribbean Academy of Science and many professional bodies and learned societies (such as IEEE, IIE, ASME, ASQ, IET, BCS, CIM, IEAust, HKIE, HKSQ, and APE). Professor Pun is currently the Chairperson of the Technology and Engineering Management Society (TEMS) Chapter of the IEEE Trinidad and Tobago Section. He was a Past Chair the Mechanical & Industrial Engineering Division of the Association of Professional Engineers of Trinidad and Tobago (2004-2009).

Professor Pun is a member of the Editorial Board of The West Indian Journal of Engineering, The Asian Journal on Quality, and International Journal of Quality and Standards. He is also an *ad hoc* reviewer of several journals such as the International Journal of Quality and Reliability Management, R&D Management, International Journal of Production Research, and International Journal of Technology Management.

He had completed several research projects funded by UWI and other overseas universities and governments. Presently, Professor Pun has five MPhil/PhD students. He published more than 200 journal articles, research and technical papers. His current research interests are in the areas of industrial engineering, engineering management, quality management, performance measurement and information technology/systems. His research work has been cited widely by researchers and scholars. As at April 2015, there were some 2,843 citations of his publications, and the 'h-index' was 32 and the 'i10-index' was 54 (source: <https://scholar.google.com/>). Dr. Pun has received several recognitions of my research accomplishments, including the 2008 Vice-Chancellor's Award for Excellence (Teaching and Research) and the 2012 'Most Outstanding Researcher Award' (Engineering) recognized by the University. His biography has been selected for The Marquis Who's Who in the World (since 2005) and The Marquis Who's Who in Science and Engineering (since 2006).

11:55 am – 12:20 pm, Thursday



Dr K.C. Vora

Vice President SAEINDIA
 Member, SAE International Engineering Meetings Board
 Sr. Dy. Director & Head, ARAI Academy
 The Automotive Research Association of India
 Research Institution of the Automotive Industry
 Pune, India

Excellence in Skill Development through Engineering Education

ABSTRACT: Engineering Education has to come out of the four walls of classroom and create an appropriate balance between 'fundamentals' and 'applications'. The students should learn from fundamentals to applications in the classroom and from application to fundamentals outside the four walls of the classroom. The engineering

students are finally expected to think critically, understand constraints, solve problems, make concepts, design products, make prototypes and validate them for the progress of mankind. This is possible through Project Based Learning (PBL) with the help of Industry Academia Partnership leading to first year corner-stone mini-projects and last year cap-stone design-projects.

With shrinking world and more use of Information and Communications Technologies (ICT), it is proposed to reengineer engineering education, not only in the field of manufacturing but also in R&D and innovation. In such a scenario, STEM (Science, Technology, Engineering and Maths) based dedicated global engineering education Programmes will enable students to use conceptual knowledge to develop solutions to real world problems in a practical manner. They must also have domain knowledge, soft skills like passion, confidence, leadership, team work, learning skills, communication skills and attitude. This will provide the perfect impetus for the next generation of industry professionals who will fuel the economic growth.

The engineering students require overall skill development to enable them to keep abreast of the latest technology & testing methods and to take a systems view of the industry & its processes, while developing their technical & managerial capabilities in global scenario. The teaching faculty is required to accept continuous change and achieve & sustain excellence in education quality, service and co-ordination. A university may prefer a mathematical derivation structure, but what is important is the practical approach for surviving in the Academia. This paper elucidates long term and short term programmes in Engineering developed globally to meet these needs. This program has been evolved jointly by The Automotive Research Association of India (ARAI), Academia and the Industry through Global Collaborations.

BIOGRAPHY: Dr. Kamalkishore Vora has done his Bachelors in Mechanical Engineering (1983) from BVM-Vallabh Vidyanagar, Masters in Automobile Engineering (1985) from VJTI-Mumbai University and his Ph.D. (2000) from IIT-Bombay on the subject of Automotive Air Pollution Control. He has a vast industrial & academic experience of 28 years and has been associated with Walchand Nagar Industries – Satara, Emitec Emission Controls – Pune, Mahindra & Mahindra – Nashik and The Automotive Research Association of India (ARAI) – Pune. He has specialized in the field of Education & Technology Development, Soft Skills, Engine R&D and Emission Controls. He is instrumental in starting ARAI Academy, which conducts B. Tech, M. Tech. & Ph.D. Courses in Automotive Engineering in Collaboration with VIT University-Vellore, VelTech University-Chennai, College of Engineering-Pune, University of Alabama-Birmingham & Tennessee Tech University-USA. He also conducts short term courses popularly known as Proficiency Improvement Programmes (PIPs) & Domain Training Programmes (DTPs). Presently Dr. Vora is Sr Deputy Director and Head of ARAI Academy and looks after Learning Centre, Training Centre and Knowledge Centre at ARAI, Pune. He is the recipient of the 'Best Learning Centre Award 2011' for ARAI Academy & Knowledge Centre from the Indian Society for Training & Development at Pune. Recently, he received GURU Award from SAEINDIA Foundation New at Delhi for his contributions to the students of India. Dr. Vora is trained at Ford Motors, General Motors, Corning, United States EPA and Emitec-Germany. He was conferred the position of Chairman, Board of Advisors (Academic) by VelTech University, Chennai and "Adjunct Professor" by VIT University-Vellore and has been Visiting Faculty in various Engineering Colleges. He was the Secretary (now Vice President) of the Society of Automotive Engineers (SAEINDIA) and conducts series of Conferences, Seminars, Workshops, Courses and various students' activities like AWIM, BAJA & SUPRA SAEINDIA. He is also coordinator of SAEINDIA Western Section, Member of SAE International Engineering Meetings Board, Member of Education Board of FISITA and SAEINDIA Off-Highway Board. He was Co-Chairman of Technical Committee of APAC 2012, Chairman of Technical Committee of SIMCOMVEC 2013 and recently Convener of SIAT 2015 SAE Conference held in January 2015. Dr. Vora has 2 patents, 2 books, 2 reports, 16 international papers & 30 national papers to his credit.

12:20 – 12:45 pm, Thursday



Rumi Tobita

Ashikaga Institute of Technology
 Ashikaga, Tochigi, Japan

Developing an Effective ESP Course for Engineering Students Integrating Analysis with NIRS

Rumi Tobita is an associate professor of department of Innovative Engineering, Ashikaga Institute of Technology in Japan. Ms. Tobita holds a Bachelor of Liberal Arts degree in Language Education, a Master of Education degree in Audio-Visual Education, and certification of Doctoral Candidate in Audio-Visual Education from International Christian University, Tokyo, Japan. Her research topics are Computer Assisted Language Learning (CALL), Educational Technology, Curriculum Development, English Program Development, English for Specific Purposes, Extracurricular activity and International Exchange Program Development, and Brain Science. She has taught several fields of courses such as Educational Technology, Social Information, Brain Science besides English

courses for engineering students for more than 10 years. She is committee member of The Japan Association for Language Education and Technology (LET) and also local organizing committee of World CALL 2008.

13:00 – 14:00 **Lunch Keynote:** **Thomas Seubert**, North American Delivery Lead for Manufacturing Execution Systems (MES), Tata Technologies, Novi, Michigan, USA

14:00 – 14:30 Networking Break

14:30 – 15:45 Global Engineering Education III (Thursday) – Salon 5

Session Chair: Dr. Jose Deliz, Universidad Turabo, Puerto Rico

2:30 – 2:55 pm, Thursday



Dr. Charles Mbohwa

Professor and Vice-Dean Postgraduate Studies, Research and Innovation
Faculty of Engineering and the Built Environment (FEBE)
University of Johannesburg's (UJ)
South Africa

Bio: Professor Charles Mbohwa is the Vice-Dean Postgraduate Studies, Research and Innovation at University of Johannesburg's (UJ) Faculty of Engineering and the Built Environment (FEBE). As an established researcher and professor in the field of sustainability engineering and energy, his specializations include sustainable engineering, energy systems, life cycle assessment and bio-energy/fuel feasibility and sustainability with general research interests in renewable energies and sustainability issues. Professor Mbohwa has presented at numerous conferences and published more than 150 papers in peer-reviewed journals and conferences, 6 book chapters and one book. Upon graduating with his B.Sc. Honors in Mechanical Engineering from the University of Zimbabwe in 1986, he was employed as a mechanical engineer by the National Railways of Zimbabwe. He holds a Masters in Operations Management and Manufacturing Systems from University of Nottingham and completed his doctoral studies at Tokyo Metropolitan Institute of Technology in Japan. Prof Mbohwa was a Fulbright Scholar visiting the Supply Chain and Logistics Institute at the School of Industrial and Systems Engineering, Georgia Institute of Technology, is a fellow of the Zimbabwean Institution of Engineers and is a registered mechanical engineer with the Engineering Council of Zimbabwe. He has been a collaborator to the United Nations Environment Programme, and Visiting Exchange Professor at Universidade Tecnológica Federal do Paraná. He has also visited many countries on research and training engagements including the United Kingdom, Japan, German, France, the USA, Brazil, Sweden, Ghana, Nigeria, Kenya, Tanzania, Malawi, Mauritius, Austria, the Netherlands, Uganda, Namibia and Australia.

2:55 – 3:20 pm, Thursday



Dr. Shannon Flumerfelt

Associate Professor
Educational Leadership
Director of Lean Thinking for Schools
Pawley Learning Institute
Oakland University
Rochester, MI 48309, USA

The New DNA of Engineering Education

Shannon Flumerfelt, Ph.D., is an Associate Professor in the Department of Organizational Leadership, an Endowed Professor of Lean, and the coordinator of the online Education Specialist degree program at Oakland University, Rochester, MI, USA. She has authored over 100 scholarly publications and books. Dr. Flumerfelt is interested in organizational improvement, leadership development and educational change. As a qualitative educational researcher, she works on many interdisciplinary projects, especially in engineering, systems and complexity. Her research focuses on lean performance management, instructional technology, content/competency designs for educational delivery and systems-based organizational leadership.

3:20 – 3:45 pm, Thursday



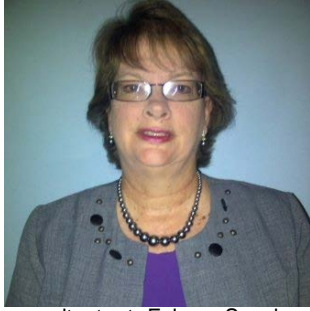
Dr. Jose R. Deliz

Associate Dean, School of Engineering
Professor and Director of Industrial and Management Engineering
Universidad Turabo
Puerto Rico

How to achieve academic excellence through assessment in IE Education

Bio: Dr. Jose Deliz is an Associate Dean of School of Engineering, Professor and Director of Industrial and Management Engineering, at University of Turabo, Puerto Rico. He was Professor of Industrial Engineering at University of Puerto Rico Mayagüez during 1981-2003. Dr. Deliz held various positions at UPRM including: Director, Office of Planning and Development, Institutional Research, Interim Director of IE Department,

Interim Dean of Administration, and Associate Director Information Systems, Office of Planning and Development, UPR System. He was an Associate Professor, School of Business Administration, and Director Office of Planning and Development, UPR Rio Piedras Campus (1974-1976). Dr. Deliz has published numerous papers. He is a member of IIE.



Jacqueline Mullen

Vice-chancellor Sponsored Research and Programs
Universidad del Turabo
Ana G. Mendez University System, Inc.
Puerto Rico

Bio: Jacqueline Mullen is Vice-Chancellor Sponsored Research and Projects Universidad Turabo. She holds an MS Community Economic Development Southern New Hampshire University, BA Latin American Studies and Spanish, Hartwick College. Member of Honor society, editor of School newspaper. She was consultant in Organizational Development and Fund Raising, Fund development and NGO/Small Business Development for the Gateway to San Juan project in public housing of Manuel A. Perez and Ramos Antonini and surrounding areas. Executive Director of P. R. Farm Bureau.

15:45 – 16:00 Break

16:00 – 17:15 Global Engineering Education IV (Thursday) – Salon 5

Session Chair: Dr. Hamid Parsaei, Texas A&M University (College Station)

4:00 – 4:30 pm



Dr. Hamid Parsaei, PE

Professor of Industrial and Systems Engineering
Texas A&M University (College Station)
and
Professor of Mechanical Engineering and
Director of Academic Outreach
Texas A&M University Qatar

Bio: Hamid R. Parsaei is Professor of Industrial and Systems Engineering at Texas A&M University (College Station) and also Professor of Mechanical Engineering and Associate Dean for Academic Affairs at Texas A&M University at Qatar. He is a registered professional engineer (PE) in Texas, a Fellow of the Institute of Industrial Engineers (IIE), and a Fellow of the American Society for Engineering Education (ASEE). He has published over 200 articles in peer-refereed archival journals and conference proceedings. He has also served as editor/co-editor in chief for four academic journals and five book series. His research, in excess of \$22 million, has been funded by numerous government and private institutions.

4:30 – 5:00 pm



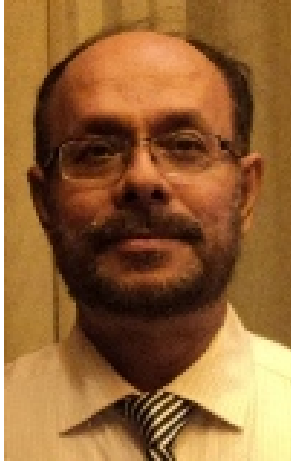
Dr. Christoph Wunck

Professor
Business Computing Systems, Industrial Engineering
College of Management, Information, Technology
Jade University
Wilhelmshaven, Germany

Raising intercultural awareness of engineering students – Strategies, challenges and lessons learned from six years of German- American Engineering Summer Programs

The talk is about a successful international undergraduate exchange program between Texas Tech University and Jade University in the area of industrial engineering, serving the different needs of students from both institutions for mutual benefit.

5:00 – 5:30 pm



Dr. Bidyut Kumar Bhattacharyya

Professor, Mechanical Engineering Department
 Director, School of Safety & Occupational Health Engineering
 Indian Institute of Engineering Science & Technology
 Shibpur, West Bengal, India

Globalizing Engineering and Management Education in India

Bio: Bidyut Kumar Bhattacharyya received B.Sc. in Mechanical Engineering from University of Calcutta, MS in Production Engineering from Faculty of Technology, M.S University, Baroda, Gujrat, and Ph.D. from Jadavpur University, Kolkata, India. He has certificate of Training on TQM – Japan Union of Scientist & Engineers (JUSE), Tokyo, Japan. Dr. Bhattacharyya has 8 years industrial experience in M.N.Dastur, Hindustan Motors and TTK Group in Quality Assurance Department. He was visiting faculty at Jadavpur University, Institute of Engineers – India, and Academic Staff College, IOLC, Haldia. Dr. Bhattacharyya co-chaired, several International Conference on Industrial Engineering & Engineering Management, China and is a member of National Sectoral Innovation Council on Occupational Safety and Health (OSH) by the Ministry of Labor and Employment,

Government of India. He has provided many keynote speeches. His research areas are Advanced Manufacturing System, Industrial Engineering, Quality & Production Management, Human Resource Management, Operation Research, and Safety & Occupational Health. Dr. Bhattacharyya has supervised many doctoral students and published many international conference and journal papers and is on the board of editors of quite a few reputed journals. He is a Member of Academic Council, School of Management Science, Indian Institute of Engineering Science & Technology, Shibpur. He has been actively involved in collaboration of industry and academia and in development of research laboratories. Dr. Bhattacharyya has also been a distinguished speaker on Global Engineering Education at IEOM Conference at Bali, 2014. He has been member of various committees of NBA, UPSC and AICTE, New Delhi.

September 11, 2015 (Friday)

08:00 – 10:00 Global Engineering Education V (Friday) – Salon 4

Session Chair: Dr. D. K. Banwet, Indian Institute of Technology (IIT) – Delhi

8:00 – 8:30 am, Friday



Jairo Alfonso Vargas, IE, BBSS

Department Head, Department of Industrial Engineering
 Fundación Universitaria Konrad Lorenz, Bogotá Colombia
 Regional VP of IIE, Central and South America

Professor Vargas is Head of the Department of Industrial Engineering at Fundación Universitaria Konrad Lorenz, Bogota, Colombia since 2008. He was and Associate Professor of Industrial Engineering at Escuela Colombiana de Ingeniería, (Bogotá) from 2003 to 2007. Professor Vargas was Dean, Faculty of Industrial Engineering at Escuela Colombiana de Ingeniería. He also worked at Universidad del Norte (Barranquilla), Pontificia Universidad Javeriana, (Bogotá), Universidad de America, (Bogotá), and Universidad Santo Tomas, (Bogotá).

Dr. Vargas serves as a Faculty Advisor for IIE Chapter at Escuela Colombiana de Ingeniería. He has been an International Consultant and Coach for over 20 years on different issues regarding Industrial Engineering such as Six Sigma, Lean Manufacturing, Work Measurement, MPS, MRP, JIT, CONWIP, etc. Dr. Vargas is an associate Consultant for "TBL" in Guayaquil Ecuador, 2000-present. He is serving as a REGION VICE

PRESIDENT of IIE, CENTRAL AND SOUTH AMERICA. Professor Vargas is also involved with other professional organizations including: ACOFI Member (Asociación Colombiana de Facultades de Ingeniería) 2007-present, member of Asociación de Ingenieros Javerianos (1991-present), member of the Academic Council of the Pontificia Universidad Javeriana, 1998 and member of the Board of Directors at Fundación Universitaria Konrad Lorenz, 2011-present. He graduated from Pontificia Universidad Javeriana, in Industrial Engineering in 1987 and received Black Belt, Six Sigma from Escuela Colombiana de Ingeniería in 2003.

8:30 – 9:00 am, Friday

Carlos Ernani Fries and Guilherme Luz Tortorella

Federal University of Santa Catarina
 Florianópolis, SC, Brazil

Application of Focus Groups and Learning Cycles on the A3 Thinking Methodology: The case of increasing machinery capacity at a steel plant

Guilherme Luz Tortorella is Adjunct Professor at the Department of Production and Systems Engineering of the Federal University of Santa Catarina (UFSC), Florianópolis, Santa Catarina State, Brazil. He earned his Bachelor degree in Mechanical Engineering from the Federal University of Rio Grande do Sul (UFRGS). His Master in Production Systems and PhD in Production Engineering were also earned from UFRGS.

Mr. Tortorella has experience in Production and Quality Systems, having taught in the graduate programs at UFRGS, ULBRA, PUCRS, UNOESC, FSG and ESADE as a guest professor. He also has 12 years of experience in the automotive industry with international activities in Mexico, England, USA and Uruguay.

Carlos Ernani Fries is Assistant Professor of the Department of Production and Systems Engineering at the Federal University of Santa Catarina (UFSC), Florianópolis, Santa Catarina State, Brazil. Mr. Fries holds a Bachelor degree in Civil Engineering as well as a Master and PhD in Production Engineering from UFSC. He has taught courses in Operations Research applied to Manufacturing and Logistics, Decision Theory, Statistics and Forecasting Models among others. His research interests include manufacturing, simulation, optimization, management games, data analysis applied to logistics, and application of big data tools. He is member of POMS.

9:00 – 9:30 am, Friday



Vladimir Robles Bykbaev

Coordinator of the Research Group on Artificial Intelligence and Assistive Technologies
Universidad Politécnica Salesiana
Cuenca, Ecuador

9:30 – 10:00 am, Friday



Dr. D. K. Banwet

Emeritus Professor
Department of Management Studies
Indian Institute of Technology (IIT) – Delhi
India
President of Indian Institute of Industrial Engineers – Delhi Chapter

Dr. Devinder Kumar Banwet is an Emeritus Professor (Operations & SCM) at the Department of Management Studies IIT Delhi. He received Eminent Engineer Award 2011 - Institution of Engineers (India) Delhi Chapter. Dr. Banwet is a FIE Fellow of the Institution of Engineers (India), Former National President of Indian Society for Training & Development (ISTD), National Treasurer, Chairman T&D Diploma Board, and Fellow & Life Member ISTD. He was President of Decision Sciences Institute India Chapter, former Head of the Department of Management Studies (DMS) at IIT, Delhi, Dalmia Chair Professor & Coordinator of Applied Systems Research Programme & Entrepreneurship Programme at IITD. Prof. Banwet is elected currently as Chairman IIE Delhi Chapter. He has 40+ years of professional experience as a professor, Researcher, Trainer, Administrator and Consultant. Dr. Banwet has 140+ publications and 29+ PhDs supervised. He had foreign assignments at Kuwait Institute for Scientific Research & in International Management Programme University of Sorbonne at Paris & 3 India Government deputation of 90 days each as Visiting Expert Faculty at Asian Institute of Technology at Bangkok. He received Pioneer Excellence Award as a doyen in SCM (2009), 16TH Dewang Mehta Business School Excellence Award Best Teacher Operations, Life time achievement awards of DMS SOM IIT Delhi, Nagaland Open University & Knowledge Management Society. Dr. Banwet also received Conferred Emerald (UK) Literati Award for a Technical Paper in International Journal of Productivity & Performance Management, highly commended Paper Journal of Enterprise Information Management & Modelling & Systems (2011). Recently one joint paper presented at an International Transportation Conference at France was awarded a special PC Award. He has conducted a large number of MDPs for government, public sector, private sector and Defense. & E-learning programmes by E-Macmillan & IITD & Hughes Satellite Communication based Programmes on Project Management, Supply Chain Management. Dr. Banwet was a Member high level committees of the Government of India, Ministry of HRD etc., National Board of Accreditation, Distance Education Approval Committee and a Board Member in some reputed Management & Engineering Institutions.

10:00 – 11:00 **Morning Keynote: Alastair Orchard**, Director Digital Enterprise Projects, Siemens PLM Software, Genoa, Italy

11:00 – 11:30 Networking Break

11:30 – 13:00 **Global Engineering Education VI (Friday) – Salon 4**

**“Outcome-Based Education (OBE) Workshop:
The Essence of OBE and Implementation Experiences in Malaysia”**

Abstract: There is a growing concern among practitioners on the competencies of fresh graduates in Malaysia. Some of the organizations have developed 'special' trainings to equip our graduates who are perceived as lack of soft skills and not ready to join the workforce. The Education Ministry has even developed a BLUEPRINT on our graduates attributes that needed by the industries. Outcome Based Education (OBE) has been introduced and implemented for more than 5 years in Malaysia. However, the program learning outcomes (PLOs) that supposedly converted into competencies and attributes of graduates have failed to satisfy the industries. Hence, this paper explores the issues and challenges in implementing OBE in a course in a management of Technology (MoT) program in UTHM. It adopts the qualitative methodology.

The research strategy is a case study. The case study protocol is based on the stages in OBE implementation. The findings discovered that there are three critical issues that hinder the success of the implementation of the OBE concepts; which are at least the human capital factor (lecturers and students), the system (management) and the infrastructure (e.g. library, classroom, etc.) that related to OBE implementation.



Dr. Chan Chee-Ming

Associate Professor and Deputy Dean (Academic and Research)
Centre for Graduate Studies
Universiti Tun Hussein Onn Malaysia
Batu Pahat, Johor, Malaysia

Bio: Chee-Ming Chan is an Associate Professor with the Civil Engineering Technology Department, Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia. She is presently holding the office of Deputy Dean in Academic and Research at the Centre for Graduate Studies in the University. Her area of expertise includes geo-materials, engineering education and higher education improvement. More recently, Dr. Chan's current work on dredged materials from Malaysian waters has gained momentum and support from the Ministry of Science, Technology and Innovation and Department of Marine, Malaysia. She is also involved in professional bodies, including the Society for Engineering Education Malaysia (SEEM), Malaysian Geosynthetics Society (MyIGS), Institution of Engineers Malaysia (IEM), Board of Engineers Malaysia (BEM), and is an education quality auditor for the Malaysian Qualification Agency (MQA). From 2009-11, Dr. Chan served as a Postdoctoral Research Fellow at the Port and Airport Research Institute (PARI), Japan.



Dr. Alina Shamsudin

Associate Professor
Deputy Dean (Teaching, Learning and Academic Training)
Centre for Academic Development and Training
Universiti Tun Hussein Onn Malaysia
Johor, Malaysia

Bio: Alina Shamsuddin is currently an Associate Professor (Technology Management) with the Faculty of Technology Management and Business of Universiti Tun Hussein Onn Malaysia. Being a founding member of her faculty, Dr. Alina is not only knowledgeable on the immediate related fields of performance measurement, production and management, she is also an expert on educational quality assessment and assurance, with 5-year experience as an auditor for the Malaysian Quality Agency (MQA). Her research concerns are myriad but inter-related, encompassing higher education quality assurance and reforms, effective teaching and learning, as well as innovative technology adoption for SMEs. Currently heading the Unit of New Programmes Development, Dr. Alina is consolidating her effort to make a difference in the quality of programme design and delivery in the overall higher educational arena, institutionally and nationally.



Dr. Azeanita Suratkon

Senior Lecturer at the Faculty of Civil & Environmental Engineering
Lead – Department of Building and Construction Engineering
Universiti Tun Hussein Onn Malaysia
Johor, Malaysia

Azeanita Suratkon is currently a Senior Lecturer at the Faculty of Civil and Environmental Engineering, and leads the Department of Building and Construction Engineering. Dr. Azeanita had a multi-national education background: bachelor's at UTM (Malaysia), Master's at Herriot-Watt University (Scotland) and PhD at Chiba University (Japan). Her international exposure has given her the leverage for a multi-facet approach in her chosen field of study, which primarily revolves around construction management, risk assessment and procurement issues. Dr. Azeanita also aims to improve the current engineering education practice, in line with the nation's Outcome-based Education philosophy, by drawing on her rich multi-discipline background. Her continuous effort in enriching construction management and higher educational reforms are driven forward in collaboration with Japanese counterparts too.

1:00 – 1:45 **Friday Lunch Keynote: Dr. Miguel Gastón Cedillo-Campos**, Professor in Logistics Systems Dynamics, Senior Researcher, Mexican Institute of Transportation and Founding President, Mexican Logistics and Supply Chain Association (AML)

1:45 – 2:30 **Friday Lunch Keynote: Uriel R. Cukierman**, Professor, Facultad Regional Buenos Aires, Universidad Tecnológica Nacional, Buenos Aires, Argentina and **President, International Federation of Engineering Education Societies (IFEES)**

2:30 – 3:30 **Competition Awards and Recognitions**

3:30 – 4:45 pm **Global Engineering Education VII (Friday) – Salon 4**

Session Chair: Dr.-Eng. Eldon Caldwell, University of Costa Rica

3:30 – 3:55 pm



Dr. Srinivas R. Chakravarthy

Professor and Department Head
Industrial and Manufacturing Engineering
Kettering University
Flint, Michigan, USA

**Modeling and Simulation in Undergraduate Education in Industrial Engineering Program:
Opportunities and Challenges**

ABSTRACT: Industrial Engineering (IE), as we all know, is centered on people and processes. First, the industrial engineers interact with people to get a better understanding of the problems the businesses and industries face. Secondly, using the skills and techniques learned in the classroom settings, they offer implementable solutions in practice. Further, the Industrial Engineers always look for ways to continuously improve the process and the products. In this talk, we will present the opportunities and challenges that undergraduate IE students as well as the educators face in dealing with two key skill sets: Modeling and Simulation, which are essential (among other skill sets) in providing solutions to a variety of problems in real-life applications.

BIO: Dr. Chakravarthy is Professor and Head of the Department of Industrial and Manufacturing Engineering at Kettering University (formerly known as GMI Engineering & Management Institute), Flint, Michigan. He received his BS (Mathematics) and MS (Statistics) degrees from the University of Madras, India, and Ph.D (Operations Research) from the University of Delaware, Newark, USA.

Dr. Chakravarthy's research interests are in the areas of algorithmic probability, queuing, reliability, inventory, and simulation. He has published more than 100 papers in leading journals and made more than 85 presentations at national and international conferences. Recognizing the impact of Neuts' Matrix-analytic methods in stochastic models, he initiated the organization of International Conference Series on Matrix-Analytic Methods (MAMs) in Stochastic Models. He co-organized the First International Conference on MAMs in Stochastic Models in 1995 held in Flint. Following the success of this conference and interests shown in the MAMs research community, the next seven conferences were held in Winnipeg, Canada (1998), Leuven, Belgium (2000), Adelaide, Australia (2002), Pisa, Italy (2005), Beijing, China (2008), New York, USA (2011), and Calicut, India (2014). The ninth one is slated to be held in Budapest, Hungary (2016).

Dr. Chakravarthy has been a visiting faculty at the Department of Statistics and Operations Research, Complutense University of Madrid, Madrid, Spain, the Department of Mathematics, Cochin University of Science and Technology, Cochin, India, and the Department of Mathematics and Statistics, Victoria University of Wellington, Wellington, New Zealand.

Dr. Chakravarthy's recognitions and awards include (a) NSF Conference Award – Co PI (DMS-1360865), 2014-2015; (b) Rodes Professor, Kettering University, 2010-2012; (c) Kettering University Distinguished Research Award, 2003; (d) Kettering University/GMI Alumni Outstanding Teaching Award, 2001; (e) Sloan Grant for developing ALN courses at Kettering University, 2000; (f) GMI Outstanding Research Award, 1996; (g) Sloan Faculty/Industry Exchange Fellowship, 1996; (h) GMI Research Initiation/Improvement Grant, 1995; (i) NSF Conference award (DMI-9424312), 1995; (j) NSF Research award (DDM-9313283), 1993-1997; (k) GMI Alumni Outstanding Teaching Award, 1990; GMI Research Initiation/Improvement Grant, 1990; (l) Lilly Faculty/Industry Exchange Fellowship, 1988.

Dr. Chakravarthy has significant industrial experience by consulting with GM, FORD, PCE, and UPS. He has also served as Engineering Group Manager for Operations Research Division in General Motors.

Dr. Chakravarthy's professional activities include serving as (a) Area Editor for the journal, Simulation Modelling Theory and Practice; (b) Associate Editor for the journal IAPQR TRANSACTIONS – Indian Association for Productivity, Quality & Reliability; (c) Advisory Board Member for several other journals and International Conferences; (d) Reviewer for many professional journals; and (e) External Examiner for a doctoral thesis from abroad.

3:55 – 4:20 pm



Dr. Sabah Abro

Professor

Program Director, Master of Science in Engineering Technology

Department of Engineering Technology

Lawrence Technological University

Southfield, Michigan, USA

Multi-Approach Evaluation of Entrepreneurial Senior Project Course

Bio: Dr. Abro is an internationally-educated person with a bachelor degree from Baghdad University, a Master's Degree from the United Nations institute in the Middle East, a Master's degree from Britain and a Ph.D. from Belgium. His education helped him to learn four languages, Arabic, English, French and Chaldean. Dr. Abro taught in Iraq, Jordan and also as a visiting lecturer in Kuwait and Morocco. He assumed different positions such as faculty, regional consultant, chair of department and acting Dean. Before joining LTU he was a Program Director at Focus: HOPE where he worked with the curriculum committee of the Greenfield Coalition. This committee designed a complete paradigm in manufacturing engineering education. Courses were developed and delivered at Focus: HOPE by three university partners. Sabah joined LTU as an adjunct faculty in 1997, then as a full time faculty in 2000. He served two departments, Math & Computer Science and the Engineering Technology. As a full time faculty at LTU, he teaches a variety of classes, advises students, works on curriculum improvement, course development, writes professional papers and presents in conferences. His passion in Education led him to be the winner of 2012 faculty of the year award at Lawrence Technological University and being nominated for Teaching Excellence and Using Technology in Classroom Awards. He is the Director of Master's program in Engineering Technology, teaches courses for Doctorate students and is a member of several Doctorate Committees in the College of Engineering. Dr. Abro serves as Director of the University Assessment Committee and the Vice Chair of the Engineering Faculty Council.

4:20 – 4:45 pm



Dr.-Eng. Eldon Caldwell

Director, Industrial Engineering Department

Engineering School

University of Costa Rica

Using Robotics as Educational Framework Strategy in Industrial Engineering: The Experience at University of Costa Rica

Abstract: Industrial engineering evolve, as formal science and as practice, in a world experiencing a faster technological revolution that gave birth to the late nineteenth century. The "core study object" of this discipline is still what I call "the complex production system"; which is present in contexts as diverse as the services sector, the goods producing sector, government organizations and public and private social organizations. One of the main features of these new complex production systems, is undoubtedly cognitive ability in dynamic and chaotic environments so robotic applications appear as a technological factor. Analyzing the experience at the University of Costa Rica, this conference focuses on how robotics can be used to address collaborative learning, learning through projects and also developing teamwork skills, cognitive skills of abstract conceptualization, computer programming skills and design skills in concurrent environments. Implementing some changes in the curriculum and the didactic strategies, robotics give more pedagogical benefits when we use their principles in order to develop a "pragmatic, statistic, strategic, systemic and frugal" thinking. A preliminary model is presented in this lecture.

Bio: Eldon Caldwell, is full professor/ Cathedricus of the University of Costa Rica, Central America; Doctor (Ph.D.) in Industrial Engineering major in *Lean Operations Engineering*. He developed new heuristic sequencing algorithms in order to reduce cycle times and received *Summa Cum Laude* in his doctoral dissertation and Academic Crown Excellence Award in Autonomous University of Central America/ University of Nevada, USA. Currently, he is doctoral researcher at the (Dr. Sc.) Computing Science Program at the University of Alicante, Spain and doctoral researcher at the Dr. Ed. Program at University of Costa Rica, receiving the Academic Excellence Award 2013.

Dr. Caldwell is "Lean Systems Certificated Specialist", MAPV-University of Nevada, USA, ASQ-Six Sigma Black Belt Certified Trainer, and Spanish publications technical reviewer of Gary Conner, 2002 Shingo Prized. Also, Dr. Caldwell has been recognized by the IEOM Society with the "Outstanding Service Award" for his career of over 25 years as an educator, researcher and promoter of development of industrial engineering. Dr. Caldwell earn his B.Sc. and Master degree in Industrial Engineering at University of Costa Rica (Summa Cum Laude) and he earn a Master degree in Service Marketing, as well in Financial Analysis at Interamerican University of Puerto Rico (Costa Rica); M.Sc. Health Management Systems at UNED, Costa Rica and a M.Sc. Operations Management at ITESM, México. He is author of many scientific articles and two books: "Marketing of Social Products and Services", UCR Pub. and "Lean Manufacturing: Fundamentals and techniques for cycle time reduction", Kaikaku Institute Press, USA.

Dr. Caldwell served as Operations Manager at MASECA, CA; Lean Manufacturing Project Manager at Eaton Corp. Costa Rica, General Manager at Quirós & Cia-Bandag Inc. and General Manager at Lean Systems Intl., USA. He has 25 years of experience as advisor and consultant in Operations Management, Lean Manufacturing and Lean Logistics at Interamerican Bank for Development, WHO, UN, World Wide Bank, Coca-Cola, Ministry of Health, Costa Rica, Honduras, Panamá, Costa Rican Institute for Electricity, RTC- Perú, Young Electrical Signs, Nevada, USA, AirCare Inc., Reno, Nevada, Plan International-Honduras, and many others.

Currently, Dr. Caldwell is Director of Industrial Engineering Department at Engineering School of University of Costa Rica.

5:00 – 6:15 pm Global Engineering Education VIII (Friday) – Salon 4

Session Chair: Dr. Muhammad H. Zaman, Boston University, USA

5:00 – 5:30 pm, Friday



Dr. Muhammad H. Zaman

Associate Professor & Associate Chair for Undergraduate Affairs
Department of Biomedical Engineering
Associate Director, Kilachand Honors College
Boston University, USA

Engineering Education in Africa: Impact for Development and Sustainability

Bio: Dr. Muhammad H. Zaman is Director of Laboratory of Engineering Education and Development, Associate Professor and Associate Chair of Biomedical Engineering and Associate Director of Kilachand Honors College at Boston University. Prof. Zaman is actively involved in engineering education and curriculum development in resource limited countries. As the co-Director of UN Economic Commission for Africa's Biomedical Engineering Initiative, he is actively involved in creating and sustaining biomedical engineering programs across various institutions in Africa including universities in Kenya, Zambia, South Africa, Ethiopia and Uganda. He has won numerous awards in teaching and educational research, these include awards from IEEE Education Society, IEEE EMBS Young Investigator Award, American Society for Engineering Education and The University of Texas Board of Regents. His work has been profiled by BBC, The New York Times, National Public Radio, Popular Science, Scientific American and others. His research is funded by USAID, UN Economic Commission, NIH, National Science Foundation, Gates Foundation and other international private and public organizations.

5:30 – 6:00 pm, Friday



Mrs. Ghamande Manasi Vyankatesh

Vishwakarma Institute of Technology
666 Upper Indira Nagar, Bibwewadi
Pune 411037, Maharashtra, India

Challenges of Self-Financing Engineering Institutes for Better Survival in Future

Abstract: Due to privatization of Technical Education in 1983 in the state of Maharashtra, not only opportunities for higher education in Technical Stream were created but also lot of challenges came on surface. Large no. of Institutions which are essentially self-financing, offered education in unconventional faculties, which was no doubt need of the hour. However the mere no. gave rise to getting good quality students and faculty attracted to these Institutions a real challenge. The socio-economical dimension played vital role in getting placements and preparing engineers which are fit for future. The financial constraints further made it mandatory to look for alternate sources of income, over and above fees collected from students. The fierce competition further worsened the scenario. Time has come to evolve sustainability and maturity model for higher technical education. Income generation through customized MDPs for industry professionals, extending testing and calibration facilities are some options that are readily available with some investment. Implementation of green concepts like through solar campus, STP, ETP are need of the hour. Waste reduction is the key factor. Research has to be strengthened, which traditionally has been overlooked. Systems like ISO QMS, TQM and accreditation by agencies of national/ international repute are now necessary. EDP cell and supporting entrepreneurship on the campus can bring down the placement burdens. Resource sharing is another initiative that can be taken up. All such and many more innovative steps can lead to survival and growth of self-financing institutions in near future.

Biography: Mrs. M.V. Ghamande, working as an Assistant Professor at Vishwakarma Institute of Technology, Pune, Maharashtra, India. I have done B.Sc. in Chemistry in 1988 from Savitribai Phule University and M.Sc. in 1990 from same University. I have presented about seven papers in National Conference on technical /my subject. And one technical paper at International Conference at Mauritius In 2010. I have also presented four papers on management topic in National Conference.

6:00 – 6:30 am, Friday



Dr. Hansa Lysander Manohar

Associate Professor
Department of Management Studies
Anna University
Chennai, India

A Roadmap to Integrate Sustainability and Innovation in Engineering Education

Abstract: Engineering education should cater to an innovation process to develop a sustainable product-service which should include need-finding, design, implementation and through various other activities till remanufacturing if it is required. The course should encourage research results to be continuously developed in close collaboration with the global industry to develop a relevant product-service through the theoretical understanding of the future engineers. New ideas should be able to frequently flow from consumers, suppliers, partners, research institutions or even from regulators. This presentation

gives a Roadmap to efficiently use the optimum resources available to lead to a significant cost saving model through extensive impact analysis across the value chain.

BIO: Dr. Hansa is an Associate Professor in the Department of Management Studies, College of Engineering, Guindy, Anna University, Chennai, India. She is the Coordinator for Distance Education MBA, M.Sc (Computer Science) and MCA. Dr. Hansa has a B.Tech in Textile Technology, M.B.A in Systems and Marketing and a Ph.D in Operations and Technology Management from Anna University, Chennai, M.C.A from the Institute of Distance Education, University of Madras, Chennai and FDP from Indian Institute of Management -Ahmedabad. She was the 4th University Rank holder in MBA at Anna University and has received the Best Teacher Award in 1996-97 and 1999-2000. Dr. Hansa was involved with Academic Institutions like All India Council for Technical Education (AICTE) and University Grants Commission (UGC) in conducting Induction Training Programmes and Capacity Building Workshops. She has coordinated with Industrial Institutions like CII (Confederation of Indian Industries) to conduct Technical Seminars. Dr. Hansa has prepared Training & Development CD's, given guest lectures through VSAT on Motivational Skills, Behavioral Patterns, Environmental Awareness and Career Counseling. Dr. Hansa has authored books on "Technology Transfer" and "Strategic Technology Planning" for Centre for Distance Education, Anna University, Chennai and "Entrepreneurship & Management of Small Business" for Distance Education, University of Madras. Dr. Hansa has collaborated with All India Council for Technical Education (AICTE) in a development project on Total Quality Management. She has collaborated with ITCOT and KVIC in consultancy activities on feasibility of setting up a processing plant, technology economics for the introduction of a new appropriate technology. She has prepared a Manual for ISO 9000 certification for knitwear units. She has over 25 years of Teaching and Research experience specializing in Optimization of Supply Chains, Healthcare Management, Knowledge Management Systems and Innovative Sustainable Operations. She has guided 9 doctoral research scholars. She has over 15 International and 30 National publications and has presented over 20 International and 35 National papers. She teaches courses on Supply Chain Management, Product Design, Total Quality Management, Knowledge Management Systems, Software Project Quality Management, Cloud Computing and Data Analysis & Business Modeling.

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