IUCEE NEWS LETTER - 2021

MAKING A BETTER WORLD WITH BETTER ENGINEERING EDUCATION

SUMMIT | SYMPOSIUM | WEBINAR | CONFERENCE

iucee.org
HISTORY AND VISION

IUCEE was formed by a group of academic and industrial experts from India and the US and gradually included experts from other countries as well. The vision of IUCEE is to improve the quality and global relevance of engineering education in India. For the first two years in 2008 and 2009, US experts travelled to India to discuss global best practices in teaching and research in their field with Indian faculty at Faculty Leadership Institutes.

IUCEE realized that sustainability of the mission of IUCEE requires an ecosystem for transformation with focus on faculty development, student development, curriculum development, as well as improved teaching technologies & engineering education research. The IUCEE Consortium is a network of institutions forming the core of the ecosystem for the required transformation. These institutions value such an ecosystem by sharing, collaborating and contributing to it and making it financially sustainable.

Annual fees from these institutions enable IUCEE to maintain a minimum staff for operations and to support essential travel and infrastructure. Members of the consortium receive special assistance in establishing collaborations with international experts and institutions.
Dr. Krishna Vedula has B.Tech (IIT Bombay, India, 1967), M.S. (Drexel University, 1969) and Ph.D. (Michigan Tech University, 1980) degrees in Materials/Metallurgical Engineering. He has 25 years academic teaching and research experience in materials science and engineering, including 10 years as a faculty member at Case Western Reserve University, 5 years as chair of the materials science and engineering department at Iowa State University and 8 years as dean of an engineering college at UMass Lowell. In addition he has spent 2 years managing federal research and educational programs.

Dr. Vedula is co-founder and executive director of IUCEE. He is well recognized globally for his contributions to engineering education, research, administration and outreach. He is internationally recognized for his research in processing and properties of materials for high temperature applications, with particular emphasis on powder processing and intermetallic compounds and environmental effects.
IUCCE provides a variety of programs as part of the ecosystem for improving the quality of engineering education in India. These programs fall under the Verticals of Faculty, Students and Leadership. These programs are made possible by a network of global experts and with the support of fees from consortium institutions and donations from individuals and corporates.
Project Management FDP for NEP 2020 Implementation

July 4th to July 31st, 2021

DR. MANU VORA, BUSINESS EXCELLENCE INC, USA

DR. ANIL KUMAR AGRAWAL, IIT (BHU), INDIA
Enhancing Clean, Green, and Smart Learning Spaces in & around the Campus

March 17th to August 10th, 2021

DEEPAK WAIKAR, EDUENERGY, SINGAPORE

ER. DEEPAK GADHIA, SUNRISE CSP, INDIA

DR. AJAY CHANDAK, SOLAR COOKERS INTERNATIONAL, INDIA

MR. GAURAV KEDIA, INDIAN BIOGAS ASSOCIATION, INDIA
NURTURING RESEARCHER-PRO MINDSET IN SELF

DEEPAK WAIKAR, EDUENERGY, SINGAPORE

July 24th, 2021
Ongoing
Foundations Course in Research Methods

5th - September, 2021 Ongoing

DR. PRATHIBA NAGABHUSHAN,
AUSTRALIAN CATHOLIC UNIVERSITY,
AUSTRALIA

DR. JOHN THARAKAN,
HOWARD UNIVERSITY, USA
ANNUAL LEADERSHIP SUMMIT
9th, 10th, 11th - July, 2021

DAY 1 / PREPARING GRADUATES FOR INDUSTRY 4.0
Virtual/Augmented Reality, Smart Manufacturing, Expanding Teaching and Research in Emerging Technologies, Preparing for a career in IT

DAY 2 / FOSTERING ENTREPRENEURSHIP IN GRADUATES
Innovation, Faculty Internships in Industry, Centers for Entrepreneurship, Building Culture of Research and Entrepreneurship

DAY 3 / LEADERSHIP FOR IMPLEMENTING NEP GUIDELINES
Shaping and Aligning Departmental Culture through Leadership, Leadership for NEP 2020, TQM in Education, Challenges Leadership faces in Implementing PBL

296 LEADERS
51 INSTITUTIONS
16 VICE CHANCELLORS, DIRECTORS AND PRINCIPALS.
“Symposium on Engineering Mathematics with MATLAB” was held virtually on 6th to 8th Sept 2021. This effort was a true collaboration between MathWorks, IUCCEE and RV College of Engineering. They acquired new tools and abilities for implementing the NEP 2020 Guidelines, which recommend more project based experiences for educating the future generations of engineers. The Symposium has shown participants how MATLAB handles numerical expressions and mathematical formulas in classroom, which make it an excellent tool for teaching and research.
STUDENT SUMMIT 2021
Believe.Belong.Become
3rd, 4th, 5th September, 2021

Sessions

- Design Thinking Quiz Show
- Kaun Banega Top ka Engineer
- Students debating on topics of relevance and current affairs
- On the Spot Speaking competition,

Leading by 40 Students
21 Students Chapters
200 Project Abstract Presentation
29 Awards
60 Certificate of Recognition

sites.google.com/view/studentsummit21/
Engineers Day was observed on September 15, with an online meeting and a discussion of the importance of Professional Ethics.
This is a follow up to RRSPBL 2021 which was held in June and concluded with a Call to Action for building a PBL Movement in India. The main objective of the Mini-Symposium is to identify good practices, share the challenges and lessons learned, and prepare an actionable PBL roadmap unique to the Indian context. This is directly relevant to guidelines for “holistic and interdisciplinary education” as per the National Education Policy (NEP) 2020. The One-and-half-day Mini-Symposium will be held on 9th (Saturday) and 10th (Sunday) October 2021.
IFEES GEDC Webinar July 7: “Future of Computing”
- Dr. Wei Zhao, Shenzhen Institute of Advanced Technology, China

IFEES GEDC Webinar July 14: “Engineering Pedagogy Interplay between Work and Learning Life in Sub-Saharan Africa: Case of Uganda”
- Vincent Olema, Vocational Education & Training, E-learning

UML Global Webinar July 15: “E forAll: Turning Dreams into Businesses”
- Sophan Smith, Executive Director at Entrepreneurship for All (EforAll), Lowell, MA

IFEES GEDC Webinar July 21 “The Role of Liberal Arts Studies Relative to STEM”
- Dr. R Natarajan, Former Director IIT Madras

IFEES GEDC Webinar July 28 “Understanding Digital Transformation”
- Mr. Sesha Kishore Kommareddi, CEO of SK Deep Tech

IFEES GEDC Webinar Aug 11 “The Threat Landscape of Cybersecurity”
- Shay Zandani, Cyber Security Consultant, New York
WEBINARS
GLOBAL

GEDC Webinar Aug 18 “Strengthening empathy and care in engineering through a global community”
- David Delaine, Ph.D., Assistant Professor, Department of Engineering Education, The Ohio State University’s College of Engineering

IFEES GEDC Webinar Aug 25 “Consumer Insights inspire Sustainability Innovations”
- Dr. Emre Oguz, Arçelik Global şirketinde R&D Director

IFEES GEDC Webinar Sept 8 “Sculpting Accreditation Criteria for Cybersecurity Skills and Knowledge Every Graduate Needs”
- David Gibson is Professor Emeritus of Computer and Cyber Science at the United States Air Force Academy.

IUCEE Global Webinar: July 29 “Hands-on teaching of science to orphaned and abandoned children in rural India: Presentation on Balgram”
- Dr. Beheruz N. Sethna, Retired President University of W. Georgia, USA

IUCEE Global Webinar: July 12 “Writing research papers on the Scholarship of Teaching and Learning”
- Dr. Sohum Sohoni, Associate Director, IUCEE, Co-Editor-in-Chief, JEET, Professor, Milwaukee School of Engineering

IUCEE Global Webinar July 26 “Writing Winning Research Papers”
- Dr. Veena Kumar, UMD Global
CONSORTIUM

Virtual Academy July 29 “Orientation On Virtual Labs For Sensors And Measurements”
  • Dr. Ch Renu Madhavi, Associate Professor & HoD in Department of Electronics & Instrumentation Engineering; Mr. Harsha Herle, Assistant Professor, Department of Electronics & Instrumentation Engineering, RV College of Engineering, Bengaluru.

Virtual Academy July 30: “AI in Engineering Education”
  • Prof. (Dr.) Dattatraya Vishnu Kodavade, Dean, Professor & Head, D.K.T.E.S.T.I., India

Virtual Academy Aug 25 “COMSOL Multiphysics Software for Research and Project Applications”
  • Dr. Rachana S. Akki, Assistant Professor, Department of Electronics and Instrumentation Technology, RV College of Engineering

Virtual Academy Sept 14 “5G Network Slicing”
  • Dr. Vishalakshi Prabhu, Associate Professor, Department of Electronics & Instrumentation Engineering, RV College of Engineering, Bengaluru

Virtual Academy Sept 15 “Orientation On “Open Broadcaster Software”(OBS): An ICT Tool”
  • Dr. CH Renu Madhavi, Associate Professor & HoD, Department of Electronics & Instrumentation Engineering, RV College of Engineering, Bengaluru.

Virtual Academy Sept 17 “Innovation & Patents”
  • Bindu Sharma, Founder and CEO, Origiin IP Solutions
Sharing and Collaborating is central to the mission and value system for IUCEE. Monthly meetings for faculty are facilitated by IUCEE advisors.

- Outcomes Based Education (OBE) & Accreditation Cluster (July 15, Aug 19, Sept 16)
- Teaching and Learning Centers (TLC) Cluster (July 15, Aug 12, Sept 9)
- IUCEE International Engineering Educators Certification (IEECP) Cluster (July 20, Aug 17, Sept 21)
- Problem and Project Based Learning (P2BL) Cluster (July 21, Aug 31)
- Interdisciplinary Engineering Cluster (July 3, Aug 28, Sept 24)
- Industry Academy Collaboration (Aug 9) (NEW)

Journal of Engineering Education Transformations (JEET) continues to play a major role in facilitating faculty sharing. The July 2021 issue was published with 15 high quality peer reviewed papers.

30 Participants

10 IUCEE institutions
The challenge is to design a process for producing oxygen using the process of photosynthesis and make it available to patients, particularly those convalescing. Some research has shown that photosynthesis can be optimized and could be looked at as a chemical plant subject to the same chemical processes as any other. Even if the device can produce limited amounts it may be useful for providing temporary relief in emergency cases.

The teams were given 1 month to think of possible solutions and prepare a 5 minute video explaining their approach and idea.

Students applied their design thinking to come up with various ways to increase oxygen production using aquatic plants, types of algae and, selective land plants.
5 PROJECTS

Starting August 2021, 5 Projects were announced which were defined around real world problem solving. The aim is for students to undergo a PBL process while coming up with realistic solutions and ideas. A total of 250+ student teams applied for these projects.

200+ teams submitted their preliminary understanding of the problem statements and presented their Abstracts during the Student Summit. The teams are guided by their Faculty guides and several experts from IUCEE to arrive at feasible solution/s. These teams are given mentoring sessions and are expected to submit a Paper on 15th November. Shortlisted Papers will be invited to present at the Annual Student Forum and may find a place in JEET.

250+ STUDENT TEAMS APPLIED FOR THESE PROJECTS
In addition, the first year students in the pilot will be offered several mini courses by international experts and assisted by faculty from the institutions. Minicourses will be on:

- Artificial Intelligence for All
- Student Leadership
- Design Thinking
- Social Emotional Learning
- Clean and Green Campus
- Entrepreneurial Thinking

These courses will include students working on projects in order to experience holistic and multidisciplinary thinking.
The Student members of 21 Student chapters of IUCEE meet on the 3rd Saturday of every month along with their Faculty Advisors at 7PM to learn and share best practices and collaborate for smarter and more engaging experiences among them.

The Sept 18th Monthly meeting had an agenda to understand the success and failures of Student Summit held on 3rd-5th Sept. While the individual session saw intense engagement from the students, the overall representation of students from various chapters was low. The sub teams in break out rooms provided some clear insight into the participation. Online sessions overdose and academic pressures of other assignments and exams were major reasons followed by the duration and length of the Summit. The trend indicates that smaller events scattered throughout the year in smaller teams may be the new way forward.
ICTIEE is one of the signature programs of IUCEE connecting education experts and passionate educators all over the world for improving the potential for excellence in engineering education. It has emerged as a global platform for sharing best practices and collaborating with academic and industrial experts for both faculty and students. In line with the previous ICTIEE conferences, ICTIEE 2022, hosted virtually, features paper and poster presentation sessions, workshops, special lectures, panel discussions, conclaves and thus facilitating global network for the cause of effective engineering education.

ICTIEE 2022 is expected to have more than 1000 delegates and is welcoming passionate educators and students to be a part of this mega event.

The research articles submitted to ICTIEE are continuously increasing every year in terms of quality and quantity. 160 papers on engineering education have been received and are under review. Selected papers from these will be the core of the program and presented in two parallel tracks.

A Steering Committee representing the Consortium institutions and advised by global experts has started the detailed planning of the workshops, keynote as well as panel sessions. The conference is expected to attract over 1000 participants and is planned to be very interactive.

The Annual Student Forum will be held in parallel.
The Management of our **Sec 8 Company (formed in December 2020)** ensures timely and effective meetings of the IUCEE team of Global esports to ensure proper communications and decision making: **ALL HANDS Monthly Meeting (July 3, Aug 14)**

The Management also ensures compliance with all requirements of the Sec 8 Company. A Board Meeting of the FOUNDATION was conducted on Sept 15.