

Indo Universal Collaboration for Engineering Education Annual Highlights 2022

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Letter from Executive Director

In 2022, we started slowly recovering from the global crisis of COVID-19 and continued our important work of supporting young engineering students to grow more resilient and build a more sustainable world.

Our Mantra “I am teaching, are they learning?”

Our Vision is to improve the quality and global relevance of engineering education in India.

Our Mission is to build an ecosystem for transforming engineering education in India with the assistance of engineering education experts and industry from around the world.



Empowering Faculty

Quality of faculty is at the core of the teaching and learning process. It is important that faculty are empowered to teach using a student centric and outcomes-based approach.



IUCEE International Engineering Educator Certification Program (IIEECP), our signature program, recognized by IGIP, Austria, is offered - by a team of our global experts. We have certified almost 1000 faculty all over India since 2016. It has been revised and restarted after a gap due to the pandemic. We had a total of more than 300 faculty enrolled in the program for Spring and Fall 2022. This program will be offered regularly twice a year.

Faculty Empowerment Courses are offered regularly throughout the year, with the help of our global experts. **During 2022:**

- “Clean and Green Campus” was completed (from 2021) to 85 faculty.
- “Community Projects using Design Thinking” was completed (from 2021) to 51 faculty.
- “Basics of Project Based Learning” was completed (from 2021) to 71 faculty.
- “NAAC Accreditation Webinar Series” was offered to 68 faculty
- “Foundation Course in Research Methods” was offered to 37 faculty.
- “Pro Researcher Mindset” was offered to 19 faculty.
- “Engineering Education Research” is being offered to 72 faculty.

MiniSymposium PBL

Cluster Meetings, coordinated by global experts, are conducted once a month for informal sharing on the following topics. Average attendance during 2022 has been 20.

- Outcomes Based Education
 - Teaching and Learning Centers
 - IIEECP Certified
 - Entrepreneurship
 - Industry Academy Collaboration
 - Problem Based Learning
 - Unnat Bharat Abhiyan
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Catalysing Leadership

Central to the Mission of IUCEE is the **Annual Leadership Summit** which has been held since 2018. The objective is for leadership teams of IUCEE institutions come together and share their strategic initiatives and challenges. The Summit is normally held in Goa, but was conducted virtually in 2020 and 2021.



Annual Leadership Summit 2022 was held on July 8, 9, 10 in Goa and was attended by 97 participants representing 38 institutions along with 44 invited experts and sponsors. The themes were:

- 1) Building Centers of Excellence in Teaching and Learning
- 2) Leadership, Entrepreneurship and Sustainability

Pre-Summit Workshops were conducted on “Teaching Design Thinking” and “Shaping Department Culture”

As a follow up, IUCEE Network for Teaching and Learning Centers has been formed to coordinate the Teaching and Learning Centers at 31 IUCEE institutions. These and emerging ones will be mentored in 2023, in order to assist systemic transformation at institution level.

IUCEE NEP Pilot was implemented: Engineering students need to realize that the real world is holistic and multidisciplinary. This is clearly emphasized in the National Education Policy (NEP) 2020. The best time to start is in the First Year, so that students start seeing the relevance of the courses they are taking as part of the conventional curriculum.

IUCEE NEP pilot has started with 36 institutions, 1,750 first year students and 500 faculty. The six mini courses offered by IUCEE global experts this semester were:

1. Community Projects using Design Thinking
2. Clean and Green Campus
3. Entrepreneurial Thinking
4. Social Emotional Learning
5. Artificial Intelligence for All
6. Leadership and Sustainability

Students in these mini-courses worked in teams and did assignments meant to impart important professional skills required by NBA (team, communication, awareness of social responsibility, project management and life-long learning).

Assessment of the pilot suggested that the program will be more effective with second year students and better coordination by the institutions and the faculty mentors. Another pilot was planned for 2023.

Transforming Students

Our basic approach for transforming students is to provide them opportunities to experience projects. These experiences help them develop communication skills, team skills and project management skills. In particular, identifying problems and potential solutions by researching and brainstorming, enhances critical thinking, creative thinking and innovative thinking.



Courses offered in 2022 were:

- “Climate Change Concepts for Engineers” has been offered to 40 students and 7 faculty.
- “Introduction to Climate Change and Sustainability” has been offered to 442 students and 46 faculty.

Courses for students are offered by global experts with assistance of faculty from the same institution, thereby including a faculty empowerment dimension.

IUCEE Student Chapters: 29 Student Chapters existed in 2022 of which 13 were active around the year. The IUCEE Student Chapter is a truly multi disciplinary body of enthusiastic student officers and members led by a committed Faculty Advisor from IUCEE Consortium institutions. The objective of Student Chapters is to inculcate problem solving and self management abilities by taking up engineering projects for social and community areas of concern. Student Chapters are coordinated by the **National Student Council (NSC)**, which conducts regular events and meetings.

IUCEE Foundation - Wadhvani Foundation NEN Activate Program (Feb - May 2022) for Students qualifying Project Oriented Problem Based Learning program: 62 Ventures comprising 169 students: 20 ventures completed the program and were awarded Certificates of Completion by Wadhvani Foundation

Mindspark 2022 (Feb - Jun 2022): Semester long program inviting ideas from students on any one of the 7 areas of concern; viz, Agriculture & Farming, Biodiversity conservation, Human health, Renewable Energy, Road Safety, Solutions for blind, Water conservation. Ideation, solution proposal, solution validation; 86 teams comprising 344 students participated.

25 teams completed all 3 stages successfully.

Student Summit 2022: 2 day long Virtual event organized and hosted collectively by IUCEE Student chapters. The event is meant to enforce strong program management, communication, and teamwork skills in the students. The event was an amalgamation of technical and non-technical sessions. IUCEE Student Alumni talk, brain games and the most popular Student Chapter debate competition on 5 parallel topics pertaining to 5G technology, Electric Vehicles, Space travel, Digital revolution and Climate change, Technology for rich/poor of the country. More than 300 students registered. An estimated 150 students attended the event.

Sustainability Inquiry: Investigation into SDGs(Sustainability Development Goals 6, 7, 11, 13, 15) Oct - Dec 2022: to stimulate students to adopt scientific and data driven investigation to learn about select UN SDG. This program introduced Curiosity and Critical thinking skills, enhanced awareness towards climate change; 206 students participated; 138 completing successfully

IUCEE Annual Student Forum 2023

380 students from 30+ colleges from all over India, participated in IASF 2023 with the Theme: *Engineering & Technology for Sustainable Planet*, held on 4th, 5th, & 6th Jan 2023 at Vidyavardhaka College of Engineering Mysore, Karnataka. It was an opportunity for engineering students from different parts of the country to assemble and apply engineering and technology to develop solutions to real world challenges in an intense 3 days long conference. Students Experienced important Professional Skills: Critical Thinking; Scientific Inquiry Based Enquiry Based Learning; Creative Thinking; Building a Sustainability Awareness Model; Team Building; Field Work and a Mysore City 5K Run/Walk for a Sustainable Planet

Sustainability Inquiry was conducted on the select 5 out of the 17 UN Sustainable Development Goals under close guidance and mentoring by five UN INDIA Youth Climate changemakers.

- Goal 6: Clean Water and Sanitation
- Goal 7: Affordable and Clean Energy
- Goal 11: Sustainable Cities and Communities
- Goal 13: Climate Action
- Goal 15: Life on Land

The outcome of the program was a Sustainability Awareness (Practice & Preach) Model - an out of the box, simplified approach to take Sustainability awareness to more and more people.

Sharing and Collaborating



Consortium Colleges

54 Consortium Institutions provide the backbone of our financial sustainability and enable us to offer our various programs.

Adamas University, WB	MIT World Peace University, MH
AISSMS College of Engineering, MH	Model Institute of Engineering and Technology, JK
Anurag University, TS	Mohan Babu University, AP
Atria Inst of Technology, KN	Nalla Malla Reddy Engineering College, TS
B.H. Gardi College of Engineering and Technology, GJ	Plaksha University, PJ
B.M.L. Munjal University, HR	PSG Institutions, TN
B.M.S. College of Engineering, KN	Pune Institute of Computer Technology, MH
Chaithanya Bharath Institute of Technology, TS	R.K. University, GJ
Chitkara University, PJ	Rajarambapu Institute of Technology, RIT
DIT University, UK	Ramco Institute of Technology, TN
Dr. Subhash Technical Campus, GJ	RV College of Engineering, KN
GITAM University, AP	S.R. University, TS
Ganpat University, GJ	Saintgits College of Engineering, KL
Hindustan University, TN	Saveetha Engineering College, TN
Hyderabad Institute of Tech And Management, TS	SGT University, HR
JECRC University, RJ	Sreyas Institute of Engineering and Technology, TS
K.J. Somaiya College of Engineering, MH	Sri Venkateswara College of Engineering and Tech
K.K.Wagh Inst of Engg Education & Research, MH	St. Joseph Engineering College, KN
K.L. University, AP	Thiagarajar College of Engineering, TN
Kalasalingam Academy for Re and Education, TN	Vaagdevi College of Engineering, TS
KG Reddy College of Engineering and Technology, TS	Vasireddy Venkatadri Institute of Technology, AP
KLE Technological University, KN	Vidyavardhaka College of Engineering, KN
KSRM College of Engineering, AP	Vignan's Institute of Information Technology, AP
M.L.R. Institute of Technology, TS	Vishwakarma University, MH
Malnad College of Engineering, KN	Visveswaraya Technological University, KN
Marwadi University, GJ	VNR Vignana Jyothi Inst for Engineering and Technology, TS
MIT Academy of Engineering, MH	VR Siddhartha Engineering College, AP

Annual International Conference ICTIEE

Our signature annual International Conference on Transformations In Engineering Education was held from Jan 5 to 8, in Mysore after being held virtually in 2021 and 2022 and at various locations all over India since 2014

ICTIEE 2023 from Jan 5 to 8, 2023 is in the implementation stage, registered 600 participants. 16 workshops were conducted by global and Indian experts. 6 Panel Sessions with global experts and academic leaders of IUCEE institutions on topics critical to quality of engineering education, were moderated by IUCEE global facilitators. 18 Keynotes addressed were delivered by distinguished speakers from industry and around the world. 92 peer-reviewed papers in engineering education research were presented and published in our Scopus Indexed Journal of Engineering Education Transformations (JEET). Annual Awards are being made for outstanding papers, for teaching excellence, student projects and institutional excellence.

Virtual Academy Webinars

- International Federation of Engineering Education Societies (IFEES), Global Engineering Deans Council (GEDC): 30 webinars (average 100 participants)
- University of Massachusetts Lowell, USA: 15 webinars (average 120 participants)
- IUCEE Experts: 20 webinars (average 80 participants)

Journal of Engineering Education Transformations (JEET)

- Scopus Indexed
 - Quarterly Issues (15 papers each)
 - Moved to New Platform
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Partnering and Connecting

Quality Partner
ABET



Programs with Industry

- MultiCoreware: Faculty Internships (3)

Corporate Sponsors

- Dassault Systemes: Platinum Sponsor
- MathWorks: Platinum Sponsor
- Liquid Instruments: Silver Sponsor
- IonIdea: Silver Sponsor
- Math.Engineering: Bronze Sponsor
- San Jose State University: Bronze Sponsor



Global Connect

- EPICS (Engineering Projects in Community Service) Purdue University (restarting courses after COVID break)
 - ABET Quality Partner Sponsor (Promoting Outcomes Based Education and Accreditation)
 - IGIP Austria (accreditation of restructured IIEECF Certification)
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IUCEE FOUNDATION (sec 8) Governance



Directors:

Krishna Vedula, Ravi Salagame, Sampada Pachaury, Jayant Sathe, Gopalkrishna Joshi

Advisors:

Uday Desai, Indira Parikh, Manu Vora

Management Support:

Dilip Chemburkar, Anil Pandit, Peeush Bishnoi, Vasant Marathe

Planning and Implementation Support:

Kantha Reddy, Sridhar Nori, Keith Fernandes, Amit Lathigara, Siddharthsinh Jadeja

IUCEE (USA) 501c3

Directors:

Krishna Vedula, Sohumi Sohoni, Sandeep Shroff, Shanti Subramanyam, Dilip Chemburkar

Leadership Team



The graphic displays a world map with two columns of board members. The left column is for IUCEE 501c3 California, and the right column is for IUCEE Foundation INDIA. At the top center, Prof. Krishna Vedula is listed as the Executive Director. Below the map, a text box states: "We work with a global pool of Experts and Advisors (Click for Details : <https://iucee.org/who-we-are>)".

Organization	Member Name
IUCEE 501c3 California	Dr. Sohumi Sohoni
IUCEE 501c3 California	Mr. Dilip Chemburkar
IUCEE 501c3 California	Ms. Shanti Subramanyam
IUCEE 501c3 California	Mr. Sandeep Shroff
IUCEE Foundation INDIA	Dr. Gopalkrishna Joshi
IUCEE Foundation INDIA	Dr. Raviprakash Salagame
IUCEE Foundation INDIA	Mrs. Sampada Pachaury
IUCEE Foundation INDIA	Mr. Jayant Sathe

- Section 8 Company, 12A and 80G approvals received
 - Joint Board Meeting held with IUCEE Inc. USA (501c3 Company)
 - All Hands Monthly meetings held for coordinating with experts
 - Volunteer Program active
 - MRC (Member Relations Coordinators) Program active
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