

Symposium on Societally Relevant Engineering Curriculum

<http://ictiee.org/ictiee2018/>

Symposium Chair: Ashok Saxena, asaxena@uark.edu

As part of Fifth International Conference on Transformations in Engineering Education (ICTIEE), a symposium is planned on new curriculum development. The symposium will address common weaknesses in engineering curricula that must be discussed and debated. The program is designed to engage thought leaders to share ideas and best practices to respond to the need.

- It is common practice to add new courses/topics to keep the curriculum current without removing any content leading to excessive credit hour requirements for graduation
- Often curricula and program level objectives are copied from other prestigious institutions without due regard to incoming student preparation and capability and the varying stake-holder needs.
- Courses are often too theoretical and teaching is targeted to good performance in examinations and there is insufficient emphasis on learning and retention of fundamentals.
- Insufficient attention to learning the applications of the concepts learned to solve real problems that are relevant to the local conditions to which the students can readily relate.

The primary goal of the discussion at the symposium is to document best practices and ways to address these challenges. There is not a single magical formula that can be developed that meets every one's needs but some common principles can be enumerated to guide faculty in developing their own and unique approaches to meet their distinct goals.

At the core is the belief that engineering education seeks to develop the student's ability to think practically, rigorously, and quantitatively in solving real problems and the course work is the medium to develop that ability. The ability to objectively assess one's own state of knowledge relative to the knowledge that is available on the topic is an important attribute that should be developed in students so that they can pursue deeper knowledge and understanding on the topic himself/herself on a needs basis.

The symposium will bring together the thought leaders in engineering education in integrated/coordinated sessions and encourage free flow of ideas.

- **Managing Stake-holder Expectations in Engineering Curricula Design**

Organizers: Ashok Saxena, University of Arkansas and Sudip Sharma, G. D. Goenka, University

- *Accreditation and Regulatory Agency Perspective*
- *Board Member/Management Perspective*
- *Parental Perspective*

- *Student perspective*
- *Employer perspective*
- *Faculty perspective*
- **Role of Science and Mathematics in Engineering Curricula**
Organizers: Kushal K. Shah, IISER, Bhopal, and Sanjeev Kumar, Sanskriti University, Mathura
 - *Engineering faculty perspective*
 - *Perspectives from Physics, Chemistry, Biology, and Mathematics faculty*
 - *Potential for combining Engineering, Science, and Mathematics*
- **Role of Humanities in Engineering Curricula**
Organizer: Kamal Sheel, BHU
 - *Human Values, Ethics, and Social Responsibility*
 - *History, Literature, and Culture*
 - *Economics, Sociology, Psychology and Neuroscience, Political Science*
 - *Visual and Performing Arts*
- **Co-curricular Activities**
Organizers: V. K. Damodaran and Deepak Bhatnagar
 - *Innovation, Entrepreneurship, Business Competitions*
 - *Internships and Social/Community Projects*
 - *On Campus Training Offered by Industry*
- **Reports on Curriculum Development Activities**
Organizers: Krishna Vedula, University of Massachusetts, Lowell, and Jayasankar Variyar, Galgotias University

Invited and contributed papers are solicited on these and related topics. Please send a paper title, affiliation/designation, a short biography (100 words), and a short abstract (200 words) to the organizers, Ashok Saxena, asaxena@uark.edu and Krishna Vedula, krishna_vedula@uml.edu

This Symposium is being planned for Bennett University as well as at Thiagarajar College of Engineering. Interested Speakers should specify where they can participate.