

Towards implementing CDIO in a private autonomous Engineering College in India

K. Kalidasa Murugavel

Department of Mechanical Engineering, National Engineering College, K. R. Nagar, Kovilpatti, Thoothukudi District, India - 628503

A. Abudahir

Department of Electronics and Instrumentation Engineering, National Engineering College, K. R. Nagar, Kovilpatti, Thoothukudi District, India - 628503

ABSTRACT

National Engineering College is a self financing private college affiliated to Anna University, Chennai started in 1984 and granted autonomous in 2011. Under autonomous, the college brought sequences of changes improvements in regulations and curriculum design to improve the quality of education offering to different UG and PG programs with an objective to implement complete CDIO from 2019-20. In 2013, outcome based education system was introduced in teaching learning level and 2015 complete curriculum for all UG and PG are based on outcome based.

KEYWORDS

Private engineering college in India, autonomous college, affiliating college, outcome based education, CDIO implementation.

ENGINEERING EDUCATION IN INDIA

In India, there are different types of Institutions, Technical Universities, University departments and affiliated Colleges are offering different undergraduate and post graduate Engineering education. Ministry of Human Resource Development (MHRD) granted complete autonomy to some Institutions. Apart from this institutions and universities, only affiliated colleges with autonomous status have the power to have the freedom to have their own educational objectives and accordingly to frame regulations and curriculum. In most of the autonomous institutions and universities, outcome based education is followed. National Board of Accreditation (NBA), one of the signatories of Washington Accord, is awarding accreditation to the different engineering programs offered by the different autonomous institutions and universities.

OVERVIEW OF NATIONAL ENGINEERING COLLEGE

National Engineering College (NEC) was established in 1984 as private affiliated engineering college offering seven undergraduate and ten post graduate programs. All the departments approved research centres of the university to pursue doctoral programs in different disciplines. All the departments are having completed and ongoing funded projects. Now the college is affiliated to Anna University, Chennai and granted autonomous status in 2011.

PROGRESSES IN CURRICULUM DEVELOPMENT

Up to 2011, as an affiliated college, NEC followed the regulations, curriculum and syllabus prescribed by the affiliating university for different program. After becoming autonomous, the college governing council framed the new goals and objectives and decided to achieve them by implementing new and innovative educational processes OBE and CDIO.

Under autonomous, presently NEC is following regulations 2011 and 2013 and formulated regulation 2015 also for the upcoming batch of students. Under 2011, initially NEC adopted affiliating university regulations and curriculum without any major change. During third and fourth year, brought some changes in electives and detailed syllabus of the some courses as per industrial requirements and to improve the employability of the students. The regulations 2013 completely based on objectives and outcomes. The outcomes of the programs were fixed by consulting with different stake holders. The curriculum has been designed to target program and course outcomes. All the staff members were trained for OBE system and adopted new teaching learning process. Continuous evaluation has been done for the courses based on course outcomes. Final course end evaluation was done by central examination system. For setting question papers and valuing answer scripts, internal and external staff members were used with different ratios. Initially the external ratio was higher. In 2013-14, three undergraduate programs were accredited by NBA (equivalent to Washington Accord) and in 2014 for three more programs application for accreditation has been submitted.

As a next step towards CDIO, in 2014, the college governing council decided to use 100% autonomy, frame the regulation 2015 based on completely OBE and CBCS. Training programs were conducted for different level of staff members on OBE and CBCS. After the sequences of meetings and brain storming sessions, a new model for designing curriculum for NEC has been evolved. Each department used this model to design the curriculum for different programs by considering different stake holders requirements. Finally, complete curriculum design has been made and detailed syllabus for first year courses were finalized, approved by academic council and ready for implementation.

CDIO IN NEC

Now the college administration is decided to train the staff members in the innovative engineering educational model CDIO and to implement the same by incorporating the concepts in regulation 2015 by brining sequences of amendments. It is also decided that next regulation 2019 will be based on CDIO.

Corresponding author

Dr. K. Kalidasa Murugavel,
Professor and Head,
Department of Mechanical Engineering,
National Engineering College, K. R. Nagar,
Kovilpatti, Thoothukudi District,
Pin: 528503, India.
kali_vel@rediffmail.com,
hodmech@nec.edu.in



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