

**UNIVERSITY OF MUMBAI**



**Bachelor of Engineering**

**Biomedical Engineering (Fourth Year Sem VII & VIII)**

**Revised Course (Rev- 2012)**

**With effect from Academic Year 2015 -16**

**Under**

**FACULTY OF TECHNOLOGY**

(As per Semester Based Credit and Grading System)

## **Preamble**

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

Faculty of Technology, University of Mumbai, in one of its meeting unanimously resolved that, each Board of Studies shall prepare some Program Educational Objectives (PEO's) and give freedom to affiliated Institutes to add few (PEO's) and Course objectives and Course outcomes to be clearly defined for each Course, so that all faculty members in affiliated institutes understand the depth and approach of Course to be taught, which will enhance Learners's learning process. It was also resolved that, maximum senior faculty from colleges and experts from industry to be involved while revising the curriculum. I am happy to state that, each Board of studies has adhered to the resolutions passed by Faculty of Technology, and developed curriculum accordingly. In addition to outcome based education, semester based credit and grading system is also introduced to ensure quality of engineering education.

Semester based Credit and Grading system enables a much-required shift in focus from teacher-centric to Learners-centric education since the workload estimated is based on the investment of time in learning and not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. University of Mumbai has taken a lead in implementing the system through its affiliated Institutes and Faculty of Technology has devised a transparent credit assignment policy and adopted ten points scale to grade Learners's performance. Credit and grading based system was implemented for First Year of Engineering from the academic year 2012-2013. Subsequently this system will be carried forward for Second Year Engineering in the academic year 2013-2014, for Third Year and Final Year Engineering in the academic years 2014-2015 and 2015-2016 respectively.

**Dr. S. K. Ukarande**

**Dean,**

**Faculty of Technology,**

**Member - Management Council, Senate, Academic Council**

**University of Mumbai, Mumbai**

## **Preamble**

The overall technical education in our country is changing rapidly in manifolds. Now it is very much challenging to maintain the quality of education with its rate of expansion. To meet present requirement a systematic approach is necessary to build the strong technical base with the quality. Accreditation will provide the quality assurance in higher education and also to achieve recognition of the institution or program meeting certain specified standards. The main focus of an accreditation process is to measure the program outcomes, essentially a range of skills and knowledge that a Learner will have at the time of graduation from the program that is being accredited. Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

I, as Chairman, Board of Studies in Electrical Engineering of University of Mumbai, happy to state here that, Program Educational Objectives (PEOs) were finalized for undergraduate program in Electrical Engineering, more than twenty senior faculty members from the different institutes affiliated to University of Mumbai were actively participated in this process. Few PEOs were finalized for undergraduate program in Electrical Engineering are listed below;

- To provide the overall strong technical foundation to formulate, solve and analyse engineering problems during undergraduate program.
- To prepare Learners to demonstrate an ability to identify, formulate and solve electrical based issues.
- To prepare Learners to demonstrate an ability in the area of design, control, analyse and interpret the electrical and electronics systems.
- To prepare Learners for successful career in industry, research and development.
- To develop the ability among Learners for supervisory control and data acquisition for power system application.
- To provide opportunity for Learners to handle the multidisciplinary projects.
- To create the awareness of the life-long learning and to introduce them to professional ethics and codes of professional practice.

The affiliated institutes may include their own PEOs in addition to the above list

To support the philosophy of outcome based education, in addition to stated PEOs, objectives and expected outcomes are also included in the curriculum. I know, this is a small step taken to enhance and provide the quality education to the stake holders.

**Dr. M. V. Bhatkar**  
**Chairman,**  
**Board of Studies in Electrical Engineering,**  
**University of Mumbai**