Chapter 1
Overview:
Engineering educational Institutions are wellsprings of knowledge. They play a central role in the development of human resources and therefore have to continually upgrade their institutional policies, course structures, facilities to meet the demands of changing times. Education is a process for the creation of open, inspired, prepared and enriched minds. Engineering education contributes in this endeavor of ever-greening minds. Central to the process is the development of discerning learning minds and intellect that are able to perceive, observe, think, strategize and act in consonance in a creative mode in trans-national and trans-cultural global competitive environment under varying circumstances. Cognitive development and the accumulation of particular values, attitudes and skills are important objectives of education systems. The turf on which today’s engineer has to operate has undergone dramatic change in this flat world of globalization. The objective of the educational institutions is to prepare the students for this challenge for the societal cause.

1.1 An Opportunity
Engineering educational institutions play a central role in the development of human resources and in turn socio-economic development. India has witnessed an astounding growth in diverse sector of industry in the last two decades. This has resulted in unprecedented demand for engineering students. In view of this, India has taken steps to open private engineering institutions also known as self financed institutions that are run by charitable trusts on no profit basis. These institutions are not owned by the Government. Today, more than 90% institutions in India are private non-Government institutions. The engineering student intake in India has scaled up from a few thousand to around 16,00,000 over last two decades and is increasing continuously. The challenge is to maintain quality of education imparted by the private institutions in this competition. There is a need for self financed institutions to provide quality well groomed students to bridge the gap between employable and employed students. There is a need to enhance quality of technical education, in particular in self financed institutions, imparted in these institutions. The challenge is to conceive practical and pragmatic approaches and implement the reforms in the existing structured educational system of self financed engineering institutes in India.
1.1.1 Frame of Reference

To put the subject in perspective, it is important to appreciate academic structure of engineering education in India. Primarily, engineering institutions include IITs, Regional Colleges funded by Government and self financed institutions that are affiliated to Universities in the region. The self financed institutions are relatively young in the sense most of them were established only in the last two decades. Though the self financed institutions have financial autonomy, they do not have academic autonomy meaning curriculum is developed in the University by a central body that is constituted by representation from various affiliated engineering institutions. Further, examination conduct and evaluation is carried out by the corresponding University. If any self financed institution is desirous of academic autonomy, they need to apply to the University Grants Commission of Government of India for grant of academic autonomy. In this status the institute is still affiliated to the parent University and the degree is conferred upon by the respective University. It is to be underlined that the student admission process in autonomous institutes is governed by the State Government. The student fees are also decided by a dedicated committee appointed by the State Government.

There is yet another variant popularly known as Deemed University which is not affiliated to any of the other University wherein essentially degree is conferred upon by the Deemed University and not the affiliating University as in the case of Autonomous Institute.

1.1.2 Quality in Education

The meaning of quality has been explained in relation to its dictionary meaning by various renowned authors, who are pioneers in establishing quality systems.

Oxford Dictionary: Quality is degree, especially high degree of goodness or worth.

Webster's Dictionary: Quality is Grade of Excellence.

Deming defines that quality is "meeting or exceeding customer expectations."

While Juran says quality is "fitness for intended use."
In short, one can say that:

- Quality is Fitness for purpose, effectiveness in achieving institutional goals, meeting customer’s stated or implied needs or,
- Quality is Degree to which Education prepares students to be personally effective and capable within the circumstances of their life and work.

Education is a function of five dimensions of quality that include learners, enabling environment in the institute, content in terms of curriculum, processes of learning and outcomes of the learning. The outcome includes acquiring literacy, numeracy and life skills, creative and emotional skills, values and social benefits. Complementary components associated with these quality dimensions are of educational system / institute such as human resources, educational infrastructure and educational processes. These components need to integrate in the educational institute so as to impart students the quality education that constitutes aspects of learning to know wherein the students and faculty build their own knowledge as a continual learning process, learning to live together to acquire critical skills so as to develop individuals free from discriminations, learning to do that focuses on practical applications of what is learned and learning to be that emphasizes the skills needed for individuals to develop their full potential (Ref: Understanding Education Quality: EFA Global monitoring report, 2005).

National policy on Education 1986 (as modified in 1992) released by Government of India has provided insight on essence and role of education as:

1.1.2.1 In our national perception, education is essentially for all. This is fundamental to our all round development, material and spiritual.
1.1.2.2 Education has an acculturating role. It refines sensitivities and perceptions that contribute to national cohesion, a scientific temper and independence of mind and spirit – thus furthering the goals of socialism, secularism and democracy enshrined in our Constitution.
1.1.2.3 Education develops manpower for different levels of the economy. It is also the substrate on which research and development flourish, being the ultimate guarantee of national self – reliance.
1.1.2.4 In sum, Education is a unique investment in the present and the future. This cardinal principle is the key to the National Policy on Education.