IMPROVING QUALITY OF TECHNICAL EDUCATION IN KERALA –

INITIATIVES BY TECHNOLOGICAL UNIVERSITY, KTU

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- **Introduction**

The APJ Abdul Kalam Technological University (KTU) is formulated to unify the technical education system in the State and cater to the needs of the technical community.   The objectives of the University include:

- To give leadership to the technology related policy formulation and planning of engineering education of the State
- To improve the academic standards of graduate, post graduate and research programmes in engineering sciences, technology and management
- To regulate the academic standards of all colleges affiliated to the University
- To promote interdisciplinary education and research in the field of engineering sciences, technology and management
- To support the establishment of Centres of excellence for multidisciplinary applied research in specific thematic areas

The structure of the University is both teaching and affiliating. A total of 154 Engineering Colleges in the State are affiliated to KTU. Unlike the traditional Universities, KTU has started its governance on an **e-platform** with maximum possible use of **e-governance,** and hence the requirement of administrative staff for activities like managing the affiliation, conduct of examination, etc. is minimal.

The University has started its operation in September 2014. The teaching activity has started with the first semester B.Tech and M.Tech courses in various affiliated colleges in August 2015.

The various initiatives by KTU to improve the quality of technical education in the State are outlined in the following sections.

- **Curriculum reforms**

The main objective of KTU is overall improvement in the quality of the academics by developing a curriculum required by the industry and imparting the same through an effective teaching and learning process with experiential learning or project based learning. For achieving this objective, KTU introduced credit based curriculum with a minimum credit to be acquired by each student to pass each academic

year. New courses like Sustainable Engineering, Design and Engineering, Life Skill, Business Economics, Principles of Management, Design Project and Comprehensive Examination at the end of sixth semester have been introduced. The comprehensive viva-voce in 6th semester will aid students in preparing for their campus placements. Supplementary examinations before the commencement of the next semester and make up examinations during summer are planned to help weaker students to acquire credits. A flexible system of acquiring degree in six years is planned for slow learners. To help students acquire minimum credits, summer course and contact courses will be conducted especially for those who fail in papers.

KTU has introduced an option to acquire Honours degree in Engineering. Students who excel in their studies can opt for this by earning three to four additional electives (12 credits). This will help in their applying for higher studies in Indian and foreign universities.

The implementation of the academic activities is done through an academic calendar. The academic activities can be planned, followed and strictly monitored throughout the year with the help of this academic calendar. Academic auditing is a novel technique introduced for each institution to ensure that they follow the academic activities and improve the quality of education.

- **Cluster for M Tech**

Towards empowering and giving autonomy to institutes, KTU has developed a cluster system for the conduct of M.Tech courses. These clusters shall have academic autonomy, regulated by a Cluster level Graduate Programme Committee [CGPC] consisting of all the principals of the colleges in the cluster. The Chairman of CGPC shall be an eminent academician nominated by the Vice Chancellor. The CGPC will be responsible for all academic matters including the curriculum, syllabi, course plans, internal evaluations, end semester examinations, and grading for all streams of M. Tech programme offered by the colleges in the cluster. A cluster has academic institutions from a particular geography and ten such clusters have been formed for the conduct of M Tech programme in KTU.

- **Entrepreneurship**

An entrepreneurship (student start up) policy in line with that of start up policy of Govt. of Kerala has been prepared by KTU and published. The policy envisages generation of 1000 student start up ideas every year which may eventually lead to 100 successful enterprises. KTU has added entrepreneurship as one of the activities in the student activity framework. Institutions have the liberty to choose a faculty or an agency to guide and mentor the students. The students can take one year off from the academics to pursue entrepreneurship. Further, KTU has developed a course- 'Design & Engineering' to help students develop critical thinking towards entrepreneurship.

- **Research**

    Centre for Engineering Research and Development (CERD) of Govt. of Kerala has been brought under KTU and it provides financial support for research activities of faculty members and students of the affiliating institutions. The Kerala Technology Congress (KETCON) is one of the conferences conducted by KTU for the dissemination of research findings. To promote research activities, KTU has purchased and installed Supercomputing facility - 'PARAM SHAVAK'. KTU has also issued its Ph. D regulations for facilitating full time and part time research by scholars.

- **International Collaboration**

    To support faculty members, KTU has made tie ups with prominent faculty members and leading academic institutions around the world. KTU has signed an MoU with Stevens Institute, USA for research on trusted systems.

- **E-governance**

    KTU has developed its portal so as to ease various processes. Through KTU portal, students can register, make payments, and check examination notifications. Colleges can also complete affiliations and other procedures.

    A Web enabled examination management system was planned by KTU for utilizing the digital technology for the logistic management of the examination system with an aim to publish the results within the shortest possible time after the last day of examination. With this, time required for setting & distribution of question papers, evaluation and publication of marks has been substantially reduced. MBA results were published successfully within three days after the completion of examinations following this system.

- **Faculty Training**

    KTU organizes workshops and training programmes for faculty development and to keep the faculty updated. Several such workshops and courses are being conducted at various Engineering Colleges with the active support of industries. This programme is being organized by ICT Academy of Kerala with the financial support from all the private and Government Self-financing Engineering Colleges.

- **Conclusion**

    The success of the reforms will depend upon the whole hearted acceptance by the stake holders. The experience is that majority of the stake holders accept changes. However, a small section always resist the changes and prevail.