

BEST PRACTICE - I

TITLE OF THE PRACTICE: A.P.J ABDUL KALAM INNOVATIVE PROJECT CELL – iQUEST

OBJECTIVES OF THE PRACTICE:

The A.P.J. ABDUL KALAM Innovative Project Cell in REC encourages and supports inter-departmental student- teams across all years to hone innovative ideas and their implementation to the level of proof-of-concept and beyond wherever feasible. The Innovative Project cell along with the Institute Innovation council (IIC) provides through iQuest – annually conducted program - the opportunity to enable student teams to give expression to their out-of-the box thinking and take up projects and execute them. It also enthuses students to pursue project-based learning.

CONTEXT:

The mission of REC states “to impart quality technical education imbued with proficiency and humane values to *provide right ambience and opportunities for the students to develop into creative, talented* and globally competent professionals and to promote research and development in Technology and Management for the benefit of the society”.

Nurturing innovation and developing the penchant for innovation among students, forms a significant aspect of student-experience and exposure in REC - Institutions of Higher Education.

PRACTICE:

The Innovative Project cell established in 2003 has been continuously active in encouraging and supporting innovation among students of REC. It conducts a competitive event iQuest for REC students annually. A committee (Innovative Projects Committee) comprising of faculty and student representatives from all the departments with a senior professor as the coordinator implements iQuest, They meet regularly to chalk out the activities for the conduct of iQUEST for the academic year. The dates for submission of project proposals, preliminary selection, final selection is decided well in advance so as to enable the students’ active participation.

Every year over hundred project proposals are received from students. Faculty mentors provide help to student-teams in formulation of the project proposals. The proposals are grouped into three streams as follows:

Stream 1: Auto, Aero, Mechanical, Mechatronics

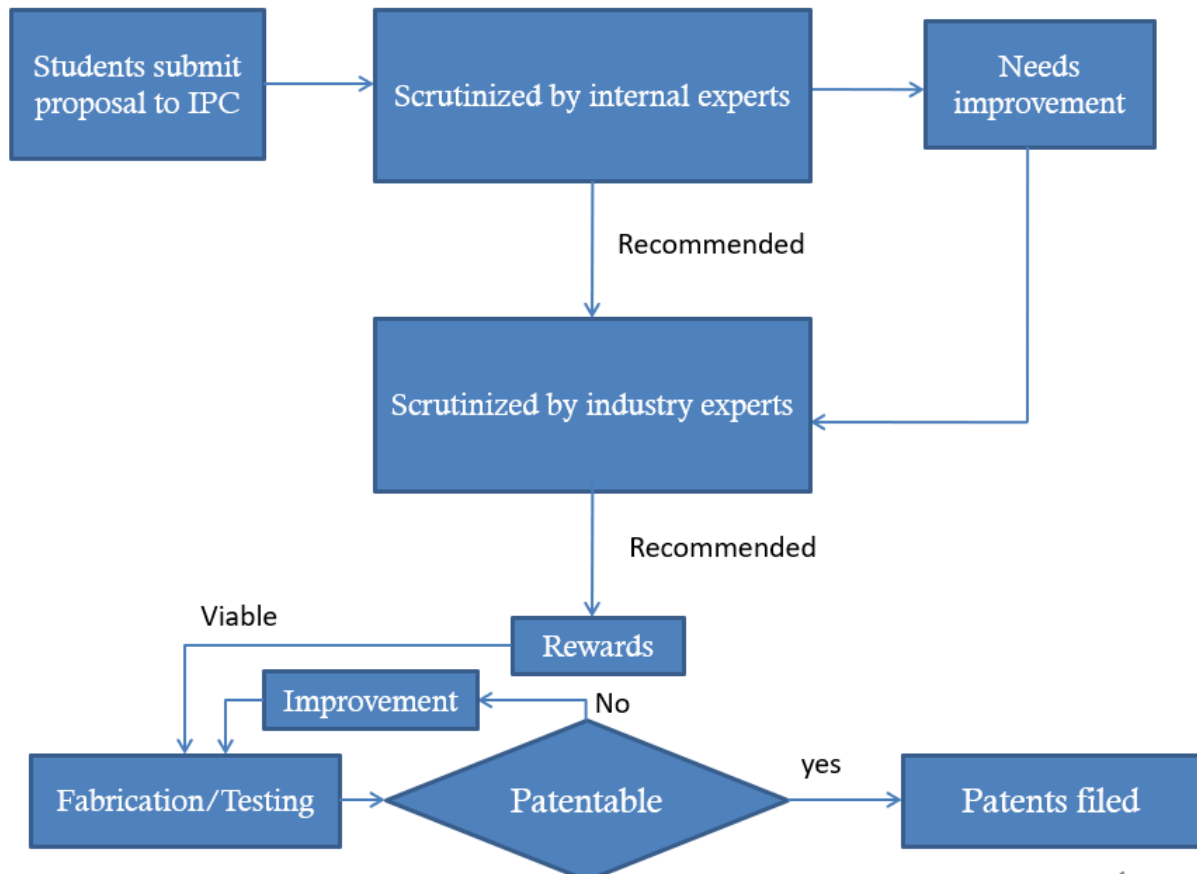
Stream 2: EEE, ECE, CSE and IT

Stream 3: Biotech, Biomed, Civil and Chemical

The proposed projects are screened by the departments and about 30 forwarded to the Innovative Project cell. Judges are invited from industries and research institutions at National and International level including accomplished alumni of REC for selection of projects to be pursued .

IPC Practice-flow

INNOVATIVE PROJECT CELL



EVIDENCE OF SUCCESS:

The proposals submitted to iQuest have won appreciation and laurels and some of these proposals have also been filed and followed up for securing patents. To mention a few achievements,

- Team ISOTOPS of REC won the BAJA SAE, India award in the “All Terrain Car competition” held at the national automotive testing and R & D infrastructure project facility at Pithampur in 2017
- The team also bagged the innovation award and cost award sponsored by TATA Motors. The expense for the project got seed fund initially from the management on recommendations of IPC.
- “Smart LED for LCD TV Backlights” project with an extension work of IPC won Idea Presentation of Engineers Day held on 15.09.2021 and applied for patent.

- The project on “Guava Leaf Extract – Stores Food Grain Insecticide” which was submitted to IQUEST, on completion was taken up filling patent and received Patent grant in 2022.

IIC, Entrepreneurship Development cell and Intellectual Property cell of REC together support the students whose projects are shortlisted in IQuest, for further development into deliverable products and to file/obtain patents

Following Patent applications have been filed so far from iQuest projects

- “A novel electro spun nano fibrous scaffold to treat skin burns,”
- “Preparation optimisation and characterisation of biodegradable food packaging material using *artocarpusheterophyllus* rags and chitosan,”
- “Smart Glove Mouse”

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:

iQuest is initiated to enrich students in project-based learning, project execution, project completion and team-work as co-curricular activity with mentoring and faculty support This also kindles their out-of-the box thinking, research-based project execution with possible outcomes of patents and publications. The students carry out the innovative projects in addition to regular academic work using all the available lab support.

BEST PRACTICE - II

TITLE OF THE PRACTICE: IMPARTUS – Lecture Capturing System

OBJECTIVES OF THE PRACTICE

The primary goal of the IMPARTUS Lecture Capturing System is to improve the Teaching-Learning Process. Through an online web interface, the platform enables teachers to record, update, and share content off-line. Students get access to the classroom video teaching through an online portal "anywhere, anytime" for gaining deeper knowledge of their subjects.

CONTEXT:

To conduct classes online, REC acquired licences for Google Workspace for Education. Being a technology-enabled institution, REC introduced the Lecture Capturing System (LCS) in 2019. This improved students' learning experience and help faculty members to provide effective and better content. Students require and benefit from further exposure beyond the class room. Using the Impartus Portal, it is possible for slow-learners to advance by learning at their own pace. It helps all students for recapitulation and for recitation.

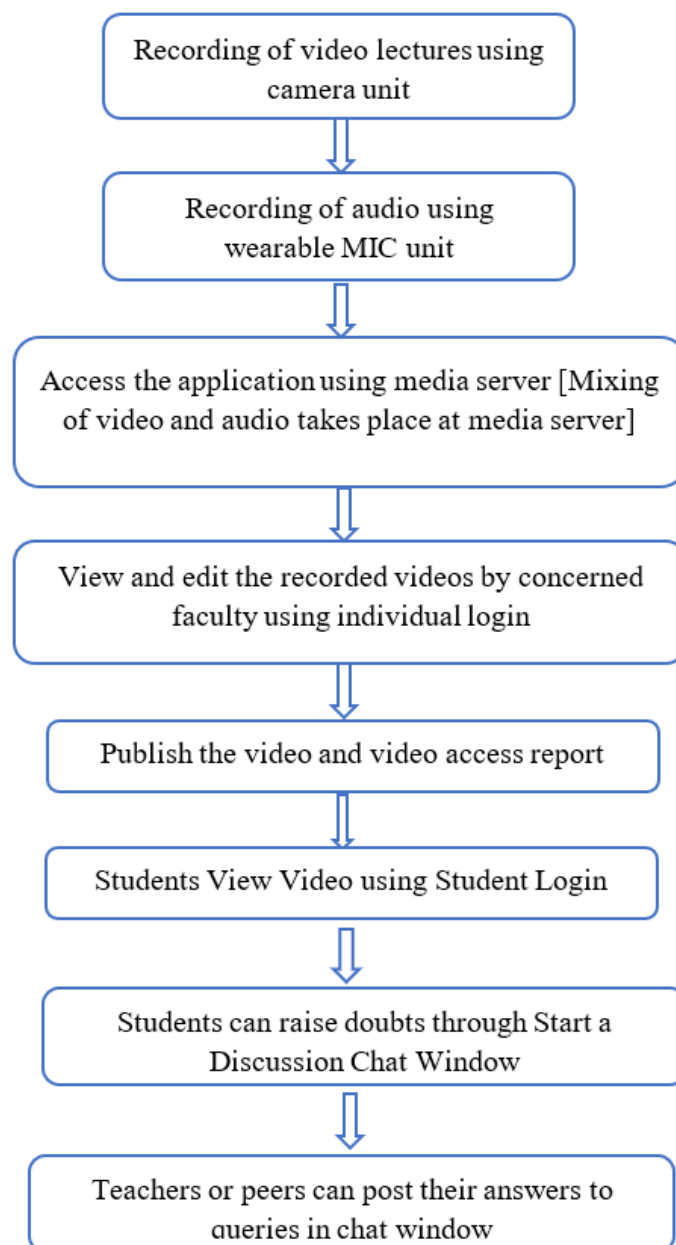
PRACTICE:

Faculty can record, edit, and share knowledge using the Impartus video&audio-based learning platform. It allows students to review class content anytime-anywhere including on their mobile-phones and thus helps in better grasp. The Impartus provides robust security measures for identity-based access for students and faculty. The impartus, in addition to, lecture capture,

remote access, live streaming, also has features for attachments, notes, video-editing, bookmarks, search, playlists, and other unique capabilities like off-line chat box.

Every classroom is equipped with camera and audio-capture, and teachers use a rope microphone unobtrusively placed around their neck. The lecture with the board and display is recorded. The lecture captured by the Impartus is placed in the faculty login to edit and publish.

Impartus Practice flow



EVIDENCE OF SUCCESS:

Students have facility to access the content through their individual student login. Our students find it useful while preparing for the Continuous Assessment Test (CAT) tests as well as for questions seeking clarification. The log details of students accessing the Impartus portal can be viewed in a dash-board.

Impartus has resulted in improved scores on the CAT. Faculty members can view and improve their teaching. Further, faculty-mentors are assigned to younger faculty to guide them to improve in pedagogy using Impartus recordings as input.

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:

Impartus enables educators to record, edit, and share content, enhancing the students' learning. A good and reliable internet connection is required for access and a rope microphone in class room. REC has good internet access by both campus backbone and WiFi, allowing for online web portal content editing and rope microphones are available.