BEST PRACTICES

INTERNAL QUALITY ASSURANCE CELL (IQAC)

Ramdeobaba University, Nagpur - 440013

(Formerly Shri Ramdeobaba College of Engineering and Management)
(An Autonomous Institute Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)
(NAAC Accredited with 'A+' Grade)
www.rbunagpur.in

Ramdeobaba University (RBU) aims to attain excellence by carrying on the legacy of RCOEM and implementing several best practices which include:

- o Transparent merit-based admission

- o Participative Management

- o Continual redesign of curriculum

- o Academic flexibility through capacity linked opportunities

- o Use of technology for teaching- learning and evaluation

- o Inspiring Innovation and Entrepreneurial Spirit

- o Facilitating learning through Industry Engagement

- o Financial Aid to deserving students by the Institute

- o Promotion of Massive Open Online Courses (MOOCs)

- o Practicing outcome-based Education

- o Student capability enhancement through skill development programs

- o Teacher's capacity building through continuous education programs

- o One semester internship : Industry, Start-up, R&D and MSME

- o Providing opportunities for incubation and entrepreneurship

- o Semester Abroad Programme offering international exposure

- o Reinvigorating the ecosystem of reading through library activities

- o Social welfare Book Bank Scheme for SC/ST students

- o Student engagement for social outreach

1. Title of the Best Practice-I

Inspiring Innovation and Entrepreneurial spirit

2. Objectives of the Practice

- To catalyze startup culture and be a part of Startup India, a flagship initiative of the Government of India
- To encourage entrepreneurial solutions to meet societal needs.

3. The Context

Since the most crucial element of launching a business is cultivating an entrepreneurial attitude. Nurturing of entrepreneurial spirit to encourage students to not only see problems, solutions, and opportunities but to come up with ideas to do something about them. The NEP2020 reforms also concentrate on fostering students' talents to ensure that they render, effective leaders, and entrepreneurs.

4. The Practice

- The Institute emphasizes on inculcating students the entrepreneurial spirit, through year round conduction of Entrepreneurship Development Programs, Design Thinking, Ideation Workshops, Pitch Your Idea, Business Plan Competitions, Transpreneur, Change Makers etc.
- Through RCOEM TBI Foundation, necessary support for new venture creation, product development, technology commercialization, seed funding, networking and value added support services is provided.
- Courses on Creativity and Innovation, Innovation and Entrepreneurship are included in the curriculum and provision for six months RCOEM TBI Foundation Startup Internship in the final semester for the students.
- Seed funding for startups.

5. Evidence of Success

- Student Startups Incubated
- Venture Capital Funding for Student Startup
- Funding for Student Startup from Meity
- Introduction of professional courses related to skill development and entrepreneurship

6. Problems encountered and Resources Required

- Hiring the right faculty with entrepreneurship experience
- Active Collaboration with the industry
- Securing Funding for Startup Business

1. Title of the Practice-II

Use of technology for teaching- learning and evaluation

2. Objectives of the Practice

Promoting use of technology for effective teaching learning to mitigate the effect of Covid-19 on education system

3. The Context

With this sudden shift away from the classroom, the adoption of digital technologies to facilitate student learning, implementing the practice was a challenge along with the available IT infrastructure with students with different demographics.

4. The Practice

The Institute has harnessed the potential of technology in education and successfully conducted the online teaching by on-boarding all courses on Google classroom for better academic transaction between faculty and students. Faculty has successfully used online tools and pedagogical approaches to enhance the efficacy of online teaching and evaluation.

5. Evidence of Success

Comprehensive online teaching and evaluation ecosystem is developed and all programmes successfully conducted the classes (Theory+ Laboratory) as per the academic calendar. It was a seamless transition from on campus learning to online learning without loss of time.

6. Problems Encountered and Resources Required

Addressing the aspect to work in a controlled laboratory setting for Laboratory courses which is a necessary aspect of engineering education in online teaching is challenging with limited online resources.

1. Title of the Practice-III

Facilitating learning through Industry Engagement

2. Objective of the practice

Establish logical link between theory and practice and to reflect the latest developments in technology within industry in curriculum.

3. The Context

The Institute has created framework for achieving vibrant environment that successfully inculcates an ambience for experiential learning. Academic teaching is supplemented by pervasive industry engagement through different activities.

4. The Practice

The Institute has introduced industry internship as integral part of its curriculum. The internship scheme includes two components, namely mandatory 6-8 weeks duration followed by one semester in the VIII semester. The other activities include co-teaching, training and projects with the industry experts getting involved in real life problems.

5. Evidence of Success

The Institute has successfully implemented the practice and helped the students prepare for and transition into graduate employment with multiple offers.

6. Problems Encountered and Resources Required

The slow pace of industrialization, absence of Original Equipment Manufacturers (OEMs) , agriculture and service-based economy of Vidarbha region makes it challenging to secure internship for all students.

1. Title of the Practice-IV

One semester internship: Industry, Start-up, R&D and MSME

2. Objective of the Practice

To impart quality education in the field of Engineering and Management and to give exposure to industry practices thereby increasing the employability of the students, one-semester internship is offered to students in following domains:

- Internship in core/IT/allied industries.
- Internship at RCOEM Technology Business Incubators Foundation (RCOEM- TBI) under the mentorship of faculty and industry personnel to foster creativity, promote innovation and nurture entrepreneurship.
- Internship on research projects to familiarize students with contemporary research trends.
- Internship at Micro Small and Medium Enterprises (MSMEs) to leverage the capability of students and faculty to provide an effective solution to the industrial problems.

3. The Context

To ameliorate the employability prospects, imparting appropriate skills for the demanding job market is essential which necessitates changes in the curriculum. Hence one-semester internship opportunity is provided to students with industry, research projects under faculty, RCOEM-TBI Foundation and MSMEs.

- Almost all the major industries offering higher packages do not directly hire. Students need to supplement their knowledge, and through these internships, the students acquire necessary skills and bring new perspectives to problem solving eventually leading to hiring by the same industry .Also curriculum revision can be made based on feedback from Industry/ students.
- Research project enables the learners to adapt research culture by identifying problems, experimentation and thereby drawing conclusions.
- RCOEM TBI Foundation provides an opportunity for the students to work on their business/start-up ideas, thus helping them in preparing the business plan, networking, identifying funding agencies for technology commercialization.

- Internship with MSME provides an opportunity to identify the industry problems and provide feasible solutions by leveraging student capabilities under the mentorship of faculty.

4. The Practice

Internship at Industry

- The Institute aggressively promotes and provides six month internship opportunities to the students all across India.
- The industries offering internships selects the students on the basis of written test, GD and PI. The students undergo Aptitude and Soft Skill training through series of online tests from various agencies like AMCAT, CO-cubes, and FNAT etc. which ensures continuous improvement in the skills of students thus leading to increased selections for internships.
- Selected students are required to complete their summer/winter term and work dedicatedly in the respective industry on the specified problem statement. Many interns are offered jobs after completion of internship.

Internship at MSME and GIZ

- The Institute has been selected for the implementation of the RGSTC-TIFAC MSME Internship Scheme of Government of India. In the first stage, the selected students are deployed for two months during their summer vacation to identify the problem of MSMEs,
- During the second phase the students work towards creating a credible work plan for developing an appropriate low cost and easily adaptable, time-bound solution in consultation with faculty and industry mentor. The Technical Screening Committee (TSC) approves the proposals for funding.
- The Institute has also been selected as a Host Institute to offer internship to students under Student Inno Project supported by GIZ.

R&D Internship at RCOEM

- RCOEM Research Internship is designed to be an educational and professional research experience and this opportunity is available for specific research projects.
- The faculty working as Principal Investigators (PI) briefs about his research to the potential interns.The selected interns are required to work full time on the project for six months under the supervision of PI.

Internship at RCOEM -TBI Foundation

- Internship at RCOEM Technology Business Incubators Foundation provides opportunity to students to work on business/start up ideas.
- This sows the seeds of entrepreneurship and helps students in product/technology development, preparing business plan, networking and identifying funding agencies for technology commercialization.

5. Evidence of Success

- This practice helped in developing learner centric environment to attain programme outcomes and achieve graduate attributes.
- The experiential learning enhanced team spirit, learning capabilities and soft skills and made them socially responsible.
- Students' proactive involvement in research projects and internship lead to patents, publications, start-ups and also enhances success rate of placements.

The GIZ and RGSTC-TIFAC MSME Internship scheme has provided opportunity for hands-on-training at industries and were benefitted from the creative ideas of the students and faculty. In more than 20 cases, solutions were adopted by the industry to resolve their problems.

6. Problems Encountered & Resources Required

The slow pace of industrialization, absence of Original Equipment Manufacturers (OEMs), agriculture and service-based economy of Vidarbha region makes it challenging for the Institute to secure internship for all students.

Following are the challenges in general faced and the resources required:

- Identification of industries to provide opportunity to large number of students with different learning ability and career goals.

- Providing opportunity to large number of students with stipend
- Identifying students with entrepreneurial mind set and their sustainability
- Identification of motivated students for research
- Uniform assessment of industry electives and project by the industry mentor

Notes:

RGSTC-TIFAC MSME is a unique scheme for "Leveraging the capabilities of students and staff for the development of MSME". RCOEM is selected for this scheme. The scheme is monitored by Dr. Anil Kakodkar, Chairman RGSTC. Students identify the problem statements and propose solution in close coordination with industry. Similar scheme is extended with GIZ.

The success of the scheme motivated us to form a section 8 company RCOEM TBI Foundation, which is incubating some of the ideas.

1. Title of the Practice-V

Financial Aid to deserving students by the Institute.

2. Objectives of the Practice

It has been observed from the profile of the students joining various programmes of the Institute that there are many students from the weak economic background. Also, the need was felt to recognize top academic performers in the Institute.

The objectives of the practice are:

- To extend financial aid to the economically weak students to enable them to continue their studies.
- To inculcate competitiveness amongst students
- To provide scholarships to academically bright students and those excelling in extracurricular activities
- To foster a sense of social responsibility amongst beneficiaries.

3. The Context

RCOEM strongly believes that excellence must be recognized and promoted. This objective had its challenges in its design and implementation. Pooling up of the required resources was a tough task. After deliberations with the concerned, the Institute has set up a student welfare fund on the campus for voluntary donations from students, staff, and alumni. After comprehensive discussions with students and teachers, it was decided to extend financial assistance to the economically weak students, who do not have the advantage of government scholarships. Verification of the financial backwardness of the aspirants was yet another challenge.

Also after due deliberations held in Academic Council and Board of Management meetings, it was decided to award merit scholarships that would motivate the students to put their best efforts towards the achievements in academics, co-curricular activities leading to overall personality development irrespective of their economic background.

4. The Practice:

Financial Assistance:

- Due to the ever-increasing financial burden of professional education, the Institute felt the need to provide financial aid to ease the burden for deserving students as per merit, to enable them to complete their professional studies. Students' Welfare Committee was established in the year 2010 to provide partial financial assistance to admitted financially weak students. During the induction program, students are made aware of the existence of this committee and the information is displayed on all the notice boards. The committee receives these applications, verifies the financial condition of candidates and then approves the disbursement of partial financial assistance. This assistance is provided either for tuition fee top-up, hostel fee, mess fee or examination fee. Besides, the committee also provides necessary guidance to the students who can avail the education loan to complete their studies.

- The financial assistance is made out of corpus fund that is maintained in the bank account "SRKNEC Students' Welfare Fund"(SWF) in UCO Bank. Originally, the corpus came into existence with a contribution of Rs.50,000 from Mr. Aditya Bhelande, an alumnus of the institute and 1-day salary contribution from teaching to the tune of Rs.2,17431/-. The alumni association of RCOEM passed a resolution that every student who completes engineering from this Institute will contribute Rs.400/- willingly to the corpus.

Merit Scholarships

- To inculcate the spirit of competitiveness amongst students, incentives in the form of scholarships are awarded for academic toppers, those excelling in research, sports, cultural activities, and higher studies. 'Best Student of the Year' award is also conferred for best all round performance. For higher classes, the scheme is implemented from session 2018-19 and for the first year, from 2019-20.
- Drawing inspiration from the institution's legacy of pro-poor-student attitude and action, Institute is also paying the tuition fee for the wards of supporting staff.

5. Evidence of Success:

Few parameters are as below:

- Increased retention

- Enhanced competitiveness

- Enhanced participation in National and International technical competitions/professional body activities Improved performance in cultural contests

- Improved performance in sports and competitive examinations

The students supported by SWF, could complete their studies and are placed with companies like L&T tech Services, Varroc, Cognizant technology solutions, Infocepts etc. Had they been not supported, they probably would have discontinued their studies. These students have developed a sense of social responsibility thereby returning back the received financial assistance for the other needy students admitted in the Institute.

The practice of awarding merit scholarships recognizes high achieving students for academics, extracurricular and co-curricular activities leading to competitiveness amongst students.

The review results of the aid indicate that it not only enables the students to acquire higher education but also moulds them to be responsible citizens.

6. Problems Encountered and Resources Required

- Verification of the financial backwardness of the aspirants.

- To continue the activity of Student's Welfare Fund in true spirit.

- To persuade needy students to continue with their studies.

The institution, true to its legacy of pro-poor-student attitude since its inception has taken a firm resolve to extend all possible financial support to the deserving students and help them to realize their dream of acquiring higher education.

For this, SWF is an initiative of staff and alumni with a firm backing from management. SWF inculcates the ethical values amongst stakeholders. All the stakeholders are committed to make this activity sustainable and operate in true spirit.

A duly constituted committee scrutinizes the applications received from the aspirants for the aid. This committee comprises of:

- Principal RCOEM
- Student Counselor
- Professor In-charge: Alumni Association
- Permanent invitees: Two senior faculty members Alumni Association Representative

Students agree upon the understanding that after completion of graduation and on gaining employment they would return the said amount to the Institute so that it could be utilized for other needy students. This fosters the spirit of social responsibility amongst students.

Title of the Practice-VI

1. **Promotion of Massive Open Online Courses (MOOC)**

2. Objectives of the Practice

- To provide opportunity to the students to study the subjects of their choice and to explore new domains of state of the art technology and advance knowledge.
- Virtual simulation of experiments to help in better understanding of the concepts.
- To inculcate the self-learning and lifelong learning abilities amongst students and faculty.

3. The Context

It was noted that lack of awareness is the biggest obstacle for the online educational resources. Also it was realized that the technology must be more efficiently used for educational purpose and the faculty should help promote digital literacy. MOOC is a response to the students who are challenged financially and promotes flexibility. It is also personification of education for modern student.

4. The Practice

The Institute is pro-actively promoting self-paced online learning through SWAYAM-NPTEL, Virtual Labs, FOSS project and other online platforms, which are initiatives of Ministry of Human Resource Development under the National Mission on Education through ICT. The Institute has been recognized as a SWAYAM-NPTEL Local Chapter and Nodal Centre for Virtual Labs.

- For the smooth conduction of MOOC, coordinators are appointed at Institute/departmental level.
- Faculty/Students use virtual labs for practicing experiments during/after teaching hours.
- Students are awarded credits / incentives / certificates as per the set norms.
- Faculty members are benefited as some of the courses are recognized by AICTE/UGC as equivalent to FDP/Refresher courses.

The practice is unique as it leverages the use of digital technology for education thereby encouraging the young students towards creative use of technology and motivates them self development.

5. Evidence of Success:

The Institute has been awarded:

- Rank 'AA' in Top 100 NPTEL Local Chapters 2020

- Rank 'A' in TOP 100 NPTEL Local Chapters 2019

- Best New NPTEL Local Chapter 2018

- Top Performing Mentor Certificates 2018-2020

Several students/faculty are recognized as NPTEL_DISCIPLINE_STARS candidates, NPTEL_ENTHUSIASTS candidate, NPTEL_BELIEVERS candidate, NPTEL_MOTIVATED_LEARNERS and have earned FDP certifications. Students actively utilized Virtual Lab, participated in FOSS training and earned certification.

6. Problems Encountered and Resources Required

- Inculcating the habit of self-learning.

- Difficulty in adapting the online learning environment.

- Development of incentive scheme for promotion of large-scale participation.

- Continuous monitoring of student's participation and performance.

1. **Title of the Best Practice -VII**
   Reinvigorating the ecosystem of reading through library activities

2. **Objectives of the Practice**
   - To foster a love for reading
   - To instill healthy reading habits through library services and other resources
   - To facilitate students to articulate their thoughts in the most creative way
   - To create a better ecosystem for remote access to digital resources

3. **The Context**

The tendency of reading books is dropping among the students of the present education system. Too much technology around and easy access to content is usually perceived as sufficient learning material by the students and prompts them to skip reading beyond it. This has catalyzed them to not read the books to complete the learning and improve their language skills.

4. The Practice

The Institute emphasizes inculcating in students a fondness for language and enhancing their critical thinking, reading, and writing skills through the
   - Readers' Reverie Club and Newsletters
   - Annual Literature Festival
   - Awareness programs for Library resources and book exhibitions
   - Open Electives: Western and Indian English Fiction and Hindi Fiction
   - State-of-the-art infrastructure for the library and a conducive environment for reading and research
   - Bird Box: Blindfolded conversation
   - Reading Corner with "Foster Reads," a startup initiated by our alumnus contributing books every month
   - Interdepartmental Competitions
   - Academic evaluation techniques mandating the use of books

5.Evidence of Success
   - Best student magazine award
   - Awards at Inter-collegiate debate competition
   - Best paper awards at international conferences
   - Sustained increase in the usage of library resources, both physical and remote

6. Problems encountered and Resources Required

   - Digital distractions, time constraints, and difficulty in finding the right books

- Poor economic condition of students, high cost of reading material, and slow internet connectivity at their place.

Ashwlid

Dr.(Mrs.)A.A.Khurshid
Dean(Quality Assurance)