



# Lendi Innovation and Startup Policy For Students and Faculty – 2021



**LENDI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

An Autonomous Institution

Approved by AICTE & Permanently Affiliated to JNTUK, Kakinada

Accredited by NAAC with “A” Grade

Jonnada (Village), Denkada (Mandal),

Vizianagaram Dist. A.P. – 535 00

## **ABSTRACT**

The Lendi Institute of Engineering and Technology Innovation and Startup Policy for students and faculty members of LIET Institution, Vizianagaram will enable the institute to actively engage students, faculty members and members of staff in innovation and entrepreneurship related activities. This framework will also facilitate in bringing clarity in LIET Startup policy, involvement of stakeholders, support and performance parameters thus enabling creation of a robust innovation and Startup ecosystem in the institute. This document states Startups Enabling Institutional Infrastructure, practices for nurturing innovations and startups. It also elaborates Innovation Pipeline and Pathways for Entrepreneurs at Institute Level, Pedagogy and Learning Interventions for Entrepreneurship Development Collaboration. Institute participation in co-creation, Business Relationships and Knowledge Exchange is also discussed at sufficient length, issue of Entrepreneurial Impact Assessment is also addressed in this policy along with the mention of annual felicitation day to motivate the students to opt entrepreneurship as a carrier option and to felicitate their proud parents. The Institution which accounts and organize all the efforts being done by the institute for promoting and nurturing innovation and entrepreneurship which was adopted as third vertical of the institute.

## Message from Chairman



**Sri. P.Madhusudana Rao**

Lendi believes in value based education and allows engineers to strengthen the society ethically. Since its inception it has been striving hard to meet this goal and I strongly believe that all the educative experience at Lendi would add value to its vision. The Institution pioneers the cause of providing quality technical education in with an attempt to transform the young Indians into highly competent and talented professionals armed with knowledge and skills. It also strives to improve the efficiency to increase his productivity for fine tuning the personality to unleash the true potential in a student. I appreciate the entire LISP team for articulate the document for future purpose of the institution.

## Message from Vice-Chairman



**Sri. P.Srinivasa Rao**

Andhra Pradesh boasts of huge pool of talented young people. These talented professionals have created an international network of skilled professionals around the world. We at Lendi are strategically poised to play a pivotal role to providing the next generation professionals, technologists, entrepreneurs. We take this opportunity to invite the corporate world to visit our campus to see the quality of education, professional standards maintained by our Institute. Surely, we are confident you will get the best of students at Lendi. I congratulate the LISP team members for enthusiastically designed the document in appropriate manner.

## Message from Secretary



### **Sri. K.Siva Rama Krishna**

The students of Lendi are prepared to enter the world of professional practice. The strong foundation coupled with thorough preparation in an engineering discipline ensures that the student will have lifelong access to rapidly developing new technologies and prepares each student to be a citizen, an advocate, and a leader in the complex world of the 21st century. The educational outcomes of Lendi are consistent with its Mission. We have created the finest facilities for the students to make the most of their scholastic pursuit. In global scenario the need of Innovations are lucrative and essential in the development of economy, in this context the designing of LISP is benefit to our institution for future endeavors of the students as well as faculty.

## Message from Principal



### **Dr.V.V.Rama Reddy**

It is indeed a great pleasure and privilege for me to profusely thank the Ministry of Human Resource Development and All India Council of Technical Education, New Delhi for providing the guidelines on National Innovation and Startup Policy for students and faculty members of higher educational institutions and for giving an opportunity to develop a startup policy document that facilitates the promotion of innovation and entrepreneurship within the institutions.

The policy guidelines on Innovation and Startups have been framed with an aim to promote the innovation and entrepreneurship culture within our institution. It ensure that innovation and entrepreneurship emerges as the primary fulcrum of our education system. LIET has taken the responsibility of implementation of Lendi Innovation and Startup Policy (LISP) for students and faculty of institution to enable all the departments to actively engage the students and staff in innovation and entrepreneurship related activities. The Policy enunciate to synergize science, technology, innovation and entrepreneurship in order to create robust innovation culture and ecosystem. So with the help of Innovation and Stratup Policy, LIET intends to create an ecosystem for implementation of Research/activities in Strat-ups.

I strongly believe that this policy take the responsibility for the growth of all possible facilities for research thirst and support and motivate all the faculty members and students toward innovations.

## Message from Convener-LISP



**Dr .A.V. Paramkusam, Professor**

**In charge of IIC**

**Convener of Lendi Innovation and Start-up Policy (LISP)**

I thank our institution management and principal for providing me an opportunity to work on the guidelines with an aim of nurturing innovation and Startups ecosystem in the institution. My firm belief is that Incubation and Innovation need to be organically interlinked. Information and communication Technology are working together vibrantly with the objective to help the faculty members and students to set-up and promote startups that are technology-based and to nurture their growth by providing the platform needed for establishment as successful entrepreneurs.

I would like to acknowledge all committee members, without whose active contributions and support, these policy guidelines would not have been possible.

### THE COMMITTEE MEMBERS OF LISP-2021

S.No	Name of the member	Position
1.	<b>Dr .A.V. Paramkusam, Professor</b> In charge of IIC Convener of Lendi Innovation and Start-up Policy (LISP)	Convener
2.	<b>Prof. M Jayadev</b> Finance & Accounting The Indian Institute of Management Bangalore (IIMB)	Member
3.	<b>Sri. B. Rama Krishna</b> Scientist 'G' Armour Design & Development Group Defense Metallurgical Research Laboratory, DRDO.	Member
4.	<b>Sri Gadde Ravi</b> Joint Director MSME DI Visakhapatnam	Member
5.	<b>Sri. M. Kalebu</b> Consultant, MSME Technology Centre Visakhapatnam	Member
6.	<b>Dr T. Vinod Kumar</b> Assistant Professor, Dept of S&H (Management Studies) Lendi Institute of Engineering and Technology	Member



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## About Institution

Our college is a premiere Institution is established in 2008 by a divine body of committed intelligentsia under the aegis of Sai Dhamam Educational Trust of Visakhapatnam to cater to the needs of young graduates of technology. It is on national highway near to both Visakhapatnam and Vizianagaram having a lush green campus with eco-friendly environment. Its vision is to produce globally competent and quality technocrats with human values for the holistic needs of industry and society.

Ours is an Autonomous College which is spread to all directions with a strength of over 2600 students and above 200 faculty. College is accredited by NAAC with "A" Grade, NBA with four branches and permanently affiliated by JNTU Kakinada.

Under the guidance of Dr. V.V. Rama Reddy, a model personality having two decades of teaching and administrative experience, Lendi offers ECE, EEE, CSE, MECH, CSSE & CSIT courses. Efficient and experienced faculty members dedicated in teaching, encouraging students to have practical exposure, individual attention etc have made Lendi famous for its teaching traits. Offering counseling to the identified slow learners, student teacher adoption program, allocation of choice based internships to the students during vacation for the practical exposure, supplying Manuals for lucidity in the practical work are the extensive practices which made LENDI a hallmark for quality engineering education.

## **Introduction**

Incubation and Innovation Center (IIC) is set up to promote innovation among the Faculty, Staff, Research Scholars, Students at LIET and startup from vicinity. This policy will also facilitate Intellectual Property ownership management, technology licensing and institutional Startup policy, thus enabling creation of a robust innovation and Start up ecosystem across LIET. The policy is subject to periodical review and amendments.

## **VISION**

To provide support and conducive environs for Faculty, Staff and Students in converting their ideas into startup and creation of successful entrepreneurs.

## **MISSION**

LISP will create an ecosystem that will foster, support innovation and knowledge-based entrepreneurship amongst the Faculty, Staff and Students to transform Knowledge into creation of wealth and social value through successful ventures.

## **Major Domains**

A student/group of students has to find out a problem statement. Problem statement should be realistic one and it should be associated directly with societal issue. The problem statement must be adhered to any of the area given in annexure 1.

### **1. Strategies and Governance**

- A. Entrepreneurship promotion development will be one of the major dimensions of the LIET strategies. To facilitate development of an entrepreneurial ecosystem in the LIET and nearby area, specific objective and associated performance indicator will be periodically defined for assessment.
- B. Implementation of entrepreneurial vision in LIET will be achieved through mission statements rather than stringent control system. The

entrepreneurial agenda will be responsibility of the Convener, IIC to bring in required commitment and well understood by the Management.

C. Resource mobilization plan will be worked out at the LIET level for supporting innovation, pre-incubation, incubation infrastructure and facilities. A sustainable financial strategy will be defined in order to reduce the organizational constraints to work on the entrepreneurial agenda.

i. Investment in the entrepreneurial activities will be a part of the institutional financial strategy. Minimum 1% fund of the total annual budget of the institution will be allocated for funding and supporting innovation and startups related activities through creation of separate 'Innovation fund'.

The strategy will also involve raising funds from diverse external funding sources through state government and central government such as DST, DBT, MHRD, AICTE, TDB, TIFAC, DSIR, CSIR, BIRAC, NSTEDB, Startup India, Invest India, MeitY, MSDE, MSME, etc. and non-government sources.

ii. To support technology incubators, LIET will approach private and corporate sectors to generate funds, under Corporate Social Responsibility (CSR) as per Section 135 of the Company Act 2013.

iii. LIET will also raise funding through sponsorships and donations. LIET will actively engage alumni network for promoting Innovation & Entrepreneurship.

D. Importance of innovation and entrepreneurial plan will be known across the LIET and will be promoted and highlighted at institutional Academic Calendar programs such as conferences, convocations, workshops, etc.

E. Product to market strategy for startups can be developed by the LIET on case to case basis.

F. Development of entrepreneurship culture should not be limited within the boundaries of the Institution.

i. LIET will be the driving force in developing entrepreneurship

culture in its vicinity (regional, social and community level). This shall include giving opportunity for regional startups, provision to extend facilities for outsiders and active involvement of the Institution in defining strategic direction for local development.

- ii. Strategic international partnerships should be developed using bilateral and multilateral channels with international innovation clusters and other relevant organizations. Moreover, international exchange programs, internships, engaging the international faculties in innovation and entrepreneurship will also be promoted.

## **2. Startups Enabling LIET Infrastructure**

Pre-incubation and incubation facilities for nurturing innovations and startups will be created. Incubation and Innovation can be organically interlinked and effort will be to link Innovation to Enterprises to Financial Success.

- A. Pre-Incubation/Incubation facility will be accessible 24x7 to students, staff and faculty of all disciplines and departments across the Institute including startup from vicinity.
- B. Pre-incubation facilities will be managed by IIC of LIET.
- C. IIC will offer mentoring and other relevant services through Pre-incubation/Incubation process in-return for fees, equity sharing and (or) zero payment basis. The modalities regarding Equity Sharing in Startups supported through IIC will depend upon the nature of services offered.

## **3. Nurturing Innovations and Start ups**

- A. LIET will establish processes and mechanisms for easy creation and nurturing of Start-ups/enterprises by students, staff (including temporary or project staff), faculty, alumni and potential start up applicants even from outside the institutions.
- B. All students of B.Tech / M.Tech have to register through LIET website or at our incubation center.
- C. LIET will be allowed to take IPR license on the developed technology on easy term, either in terms of equity in the venture and/ or license fees and/ or royalty to obviate the early stage financial burden.

- D. Students who are under incubation, but are pursuing some entrepreneurial ventures while studying will be allowed to use their address in the institute to register their company with due permission from the Convener (IIC) and Principal, LIET.
- E. Student entrepreneurs will be allowed to sit for the examination, even if their attendance is less than the minimum permissible percentage, with due permission from Convener (IIC) and Principal, LIET.
- F. LIET may allow faculty and staff to take off for a semester / year (or even more depending upon the decision of review committee constituted by the Institution) as sabbatical/ unpaid leave/ earned leave for working on startup and come back. Institution may consider allowing use of its resource to faculty/students/staff wishing to establish start up as a fulltime effort. The seniority and other academic benefits during such period may be preserved for such staff or faculty..
- G. In return of the services and facilities, IIC may take 2% to 9.5% equity/ stake in the startup/ company, based on brand used, faculty contribution, support provided and use of institute's IPR (a limit of 9.5% is suggested so that Institute has no legal liability arising out of startup. The Institute will normally take much lower equity share, unless its full-time faculty/ staff have substantial shares). Other factors for consideration should be space, infrastructure, mentorship support, seed funds, support for accounts, legal, patents etc.

#### **4. Product Ownership Rights for Technologies Developed at LIET**

- A. When LIET facilities / funds are used substantially or when IPR is developed as a part of curriculum/ academic activity, IPR is to be jointly owned by inventors and the LIET.
- i. Inventors and LIET could together license the product / IPR to any commercial organization, with inventors having the primary say. License fees could be either / or a mix of
1. Upfront fees or one-time technology transfer fees
  2. Royalty as a percentage of sale-price
  3. Shares in the company licensing the product

- B. On the other hand, if product/ IPR is developed by innovators not using any LIET facilities, outside office hours (for staff and faculty) or not as a part of curriculum by student, then product/ IPR will be entirely owned by inventors in proportion to the contributions made by them. In this case, inventors can decide to license the technology to third parties or use the technology the way they deem fit.
- C. If there is a dispute in ownership, a minimum five membered committee consisting of two faculty members (having developed sufficient IPR and translated to commercialization), two of the LIET industry experts / alumni (having experience in technology commercialization) and one legal advisor with experience in IPR, will examine the issue after meeting the inventors and help them settle this, hopefully to everybody's satisfaction. LIET can use alumni/ faculty of other institutes as members, if they cannot find sufficiently experienced alumni / faculty of their own.

#### **5. Organizational Capacity, Human Resources and Incentives**

- A. LIET may recruit staff that have a strong innovation and entrepreneurial/ industrial experience, behaviour and attitude. This will help in fostering the Innovation and entrepreneurial culture.
- B. Faculty and departments of the LIET will work in coherence and cross-departmental linkages will be strengthened through shared faculty, cross-faculty teaching and research in order to gain maximum utilization of internal resources and knowledge.
- C. Periodically some external subject matter experts such as guest lecturers or alumni can be engaged for strategic advice and bringing in skills which are not available internally.
- D. Faculty and staff will be encouraged to do courses on innovation, entrepreneurship management and venture development.
- E. In order to attract and retain right people, LIET will develop academic and non-academic incentives and reward mechanisms for all staff and stakeholders that actively contribute and support entrepreneurship agenda and activities.

- F. The reward system for the staff may include sabbaticals, office and lab space for entrepreneurial activities, reduced teaching loads, awards, trainings, etc.
- G. The recognition of the stakeholders may include offering use of facilities and services, strategy for shared risk, as guest teachers, fellowships, associateships, etc.
- H. A performance matrix will be developed and used for evaluation of annual performance.

## **6. Creating Innovation Pipeline and Pathways for Entrepreneurs at LIET Level**

- A. To ensure exposure of maximum students to innovation and pre incubation activities at their early stage and to support the pathway from ideation to innovation to market, mechanisms will be devised at LIET level.
  - i. Spreading awareness among students, faculty and staff about the value of entrepreneurship and its role in career development or employability will be a part of the LIET entrepreneurial agenda.
  - ii. Students/ staff will be taught that innovation (technology, process or business innovation) is a mechanism to solve the problems of the society and consumers. Entrepreneurs will innovate with focus on the market niche.
  - iii. Students will be encouraged to develop entrepreneurial mindset through experiential learning by exposing them to training in cognitive skills (e.g. design thinking, critical thinking, etc.), by inviting first generation local entrepreneurs or experts to address young minds. Initiatives like idea and innovation competitions, hackathons, workshops, boot camps, seminars, conferences, exhibitions, mentoring by academic and industry personnel, throwing real life challenges, awards and recognition will be routinely organized.
  - iv. To prepare the students for creating the start up through the education, integration of education activities with enterprise-related activities will be done.

LIET will link their start-ups and companies with wider entrepreneurial



ecosystem and by providing support to students who show potential, in pre-startup phase. Connecting student entrepreneurs with real life entrepreneurs will help the students in understanding real challenges which may be faced by them while going through the innovation funnel and will increase the probability of success.

LIET will allocate appropriate budget for the activities in the IIC. The LIET-IIC would guide institutions in conducting various activities related to innovation, startup and entrepreneurship development. Collective and concentrated efforts would be undertaken to identify, scout, acknowledge, support and reward proven student ideas and innovations and to further facilitate their entrepreneurial journey.

- B. For strengthening the innovation funnel of the LIET, access to financing must be opened for the potential entrepreneurs.
  - i. Networking events must be organized to create a platform for the budding entrepreneurs to meet investors and pitch their ideas.
  - ii. Provide business incubation facilities: premises at subsidized cost. Laboratories, research facilities, IT services, training, mentoring, etc. will be accessible to the new startups.
  - iii. A culture needs to be promoted to understand that money is not FREE and is risk capital. The entrepreneur must utilize these funds and return. While funding is taking risk on the entrepreneur, it is an obligation of the entrepreneur to make every effort possible to prove that the funding agency did right in funding him/ her.
- C. LIET must develop a ready reckoner of Innovation Tool Kit, which must be kept on the homepage on Institute website to answer the doubts and queries of the innovators and enlisting the facilities available at the Institute.

## **7. Norms for Faculty Startups**

- A. For better coordination of the entrepreneurial activities, norms for faculty to do startups will be created by the LIET. Only those technologies will be taken for faculty startups which originate from within the LIET.
  - i. Role of faculty may vary from being an owner/ direct promoter,

mentor, consultant or as on-board member of the startup.

- ii. LIET will work on developing a policy on 'conflict of interests' to ensure that the regular duties of the faculty don't suffer owing to his/her involvement in the startup activities.
  - iii. Faculty startup may consist of faculty members alone or with students or with faculty of other institutes or with alumni or with other entrepreneurs.
- B. In case the faculty/ staff holds the executive or managerial position for more than three months in a startup, they will go on sabbatical/ leave without pay/ utilize existing leave.
- C. Faculty must clearly separate and distinguish on-going research at the LIET from the work conducted at the startup/ company.
- D. In case of selection of a faculty start up by an outside national or international accelerator, a maximum leave (as sabbatical/ existing leave/ unpaid leave/ casual leave/ earned leave) of one semester/ year (or even more depending upon the decision of review committee constituted by the LIET) may be permitted to the faculty.
- E. Faculty must not accept gifts from the startup.
- F. Faculty must not involve research staff or other staff of LIET in activities at the startup and vice-versa.
- G. Human subject related research in startup should get clearance from ethics committee of the LIET.

## **8. Pedagogy and Learning Interventions for Entrepreneurship Development**

- A. Diversified approach should be adopted to produce desirable learning outcomes, which will include cross disciplinary learning using mentors, labs, case studies, games, etc. in place of traditional lecture-based delivery.
- i. Student clubs/ bodies/ departments will be created for organizing competitions, boot camps, workshops, awards, etc. These bodies will be involved in LIET strategy planning to ensure enhancement of the student's thinking and responding ability.
  - ii. LIET will start annual 'INNOVATION & ENTREPRENEURSHIP AWARD' to recognize outstanding ideas, successful enterprises and contributors for promoting innovation and enterprises

ecosystem within the Institute.

- iii. For creating awareness among the students, the teaching methods will include case studies on business failure and real-life experience reports by startups.
  - iv. Tolerating and encouraging failures: Our systems are not designed for tolerating and encouraging failure. Failures need to be elaborately discussed and debated to imbibe that failure is a part of life, thus helping in reducing the social stigma associated with it. Very importantly, this will be a part of LIET philosophy and culture.
  - v. Innovation champions will be nominated from within the students/ faculty/ staff for each department/ stream of study.
- B. Entrepreneurship education will be imparted to students at curricular/ co-curricular/ extracurricular level through elective/ short term or long-term courses on innovation, entrepreneurship and venture development. Validated learning outcomes will be made available to the students.
- i. Integration of expertise of the external stakeholders will be done in the entrepreneurship education to evolve a culture of collaboration and engagement with external environment.
  - ii. In the beginning of every academic session, LIET will conduct an induction program about the importance of Innovation and Entrepreneurship, so that freshly inducted students are made aware about the entrepreneurial agenda of the LIET and available support systems.
  - iii. Industry linkages will be leveraged for conducting research and survey on trends in technology, research, innovation, and market intelligence.
  - iv. Sensitization of students will be done for their understanding on expected learning outcomes.
  - v. Student innovators, startups, experts must be engaged in the dialogue process while developing the strategy so that it becomes need based.
  - vi. Customized teaching and training materials will be developed for startups.
  - vii. It must be noted that not everyone can become an entrepreneur.

The entrepreneur is a leader, who would convert an innovation successfully into a product, others may join the leader and work for the startup. It is

important to understand that entrepreneurship is about risk taking.

One must carefully evaluate whether a student is capable and willing to take risk.

C. Pedagogical changes need to be done to ensure that maximum number of student projects and innovations are based around real life challenges. Learning interventions developed by the LIET for inculcating entrepreneurial culture will be constantly reviewed and updated.

D.

### **9. Collaboration, Co-creation, Business Relationships and Knowledge Exchange**

A. Stakeholder engagement will be given prime importance in the entrepreneurial agenda of the LIET. It will find potential partners, resource organizations, micro, small and medium sized enterprises (MSMEs), social enterprises, schools, alumni, professional bodies and entrepreneurs to support entrepreneurship and co-design the programs.

i. To encourage co-creation, bi-directional flow/ exchange of knowledge and people will be ensured between institutes/ organizations such as incubators, software technology parks of India and science parks, etc.

ii. LIET will organize networking events for better engagement of collaborators and will open up the opportunities for staff, faculty and students to allow constant flow of ideas and knowledge through meetings, workshops, space for collaboration and lectures etc.

iii. Mechanism will be developed by the LIET to capitalize on the knowledge gained through these collaborations.

iv. Care will be taken to ensure that events don't become an end goal. First focus of the IIC will be to create successful ventures.

B. LIET will develop policy and guidelines for forming and managing the relationships with external stakeholders including private industries.

C. Knowledge exchange through collaboration and partnership will be made a part of LIET policy and Institute will provide support mechanisms and guidance for creating, managing and coordinating these relationships.

- i. Through formal and informal mechanisms such as internships, teaching and research exchange programmes, clubs, social gatherings, etc., faculty, staff and students of the LIET will be given the opportunities to connect with their external environment.
- ii. Connect of the LIET with the external environment must be leveraged in form of absorbing information and experience from the external ecosystem into the Institute environment.
- iii. Single Point of Contact (SPOC) mechanism will be created in the LIET for the students, faculty, collaborators, partners and other stakeholders to ensure access to information.
- iv. Mechanisms will be devised by the LIET to ensure maximum exploitation of entrepreneurial opportunities with industrial and commercial collaborators.
- v. Knowledge management will be done by the LIET through development of innovation knowledge platform using in-house Information & Communication Technology (ICT) capabilities.

#### **10. Entrepreneurial Impact Assessment**

A. Impact assessment of Institute entrepreneurial initiatives such as pre-incubation, incubation, entrepreneurship education will be performed regularly using well defined evaluation parameters.

- i. Monitoring and evaluation of knowledge exchange initiatives, engagement of all departments and faculty in the entrepreneurial teaching and learning will be assessed.
- ii. Number of start-ups created, support system provided at the Institute level and satisfaction of participants, new business relationships created by the LIET will be recorded and used for impact assessment.
- iii. Impact will also be measured for the support system provided by the LIET to the student entrepreneurs, faculty and staff for pre-incubation, incubation, IPR protection, industry linkages, exposure to

entrepreneurial ecosystem, etc.

B. Formulation of strategy and impact assessment will go hand in hand.

The information on impact of the activities will be actively used while developing and reviewing the entrepreneurial strategy.

C. Impact assessment for measuring the success will be in terms of sustainable social, financial and technological impact in the market. For innovations at pre-

Commercial stage, development of sustainable enterprise model is critical.

Commercial success is the only measure in long run.

### **Short-term Plans**

- Establish Innovation, Pre-incubation, Incubation and startup facilities on the campus
- Conduct two training programs/FDPs/EDPs/ Workshops / Lectures / Seminars/e-Talk etc. per year for skill and competency development.
- The FDPs and EDPs are to be conducted with industrial delegates.
- Encourage the students, staff and faculty to work on what they learned in conducted FDPs and EDPs.
- In the next two years at least five innovative/industrial related projects should be completed.
- Organize two competition events like campus Hackathon and Boot-camps etc. per year.
- Encourage the Students to complete Entrepreneurship Education through MOOC, Class Room, Experiential Learning programs etc.
- Encourage the Students, Faculty and Staff to access the infrastructure & facilities of IIC.
- Motivate the Students, Faculty and Staff such that the students' projects turns to (commercialize) Innovations.
- Educate the Students, Faculty and Staff to publish their research studies on Entrepreneurship.
- Identify the technical problem of the industry faces in major domain given in Annexure-I and encourage the students, staff and faculty for effective problem

solving.

- Motivate the Students, Faculty and Staff to complete Education/Skill certification program on Entrepreneurship, IPR, Innovation etc.

### **Long-term Plans**

- Developing a Critical Mass of Motivated Students & Faculties with Entrepreneurial Orientation & Skill.
- 50% of student & faculty mass with entrepreneurship Orientation
- 5% of Graduate students will choose Entrepreneurship as career
- 5 Established Start-ups
- Establish the network with connecting multiple stakeholders & Ecosystem Enablers
- Creating societal, ethical and technological entrepreneurs through National Innovation and Start-up Policy
- Increase technical employment rate through self-employment by Startups.

### **ANNEXURE-1**

- Artificial Intelligence and Remote Monitoring
- Cyber Security
- Telecommunication
- Information & Communication Technology (ICT)
- Internet of Things (IOT)
- Solar Photovoltaic systems and design optimization
- Electricity, New and Renewable Energy and Environmental sustainability
- Energy conservation, Energy efficient Motors and Equipments
- Electric Mobility
- Education
- Manufacturing Automation and Engineering
- Additive Manufacturing
- Water, Sanitation and Solid-Liquid Waste Management
- Waste heat Recovery Systems
- Drone Technology
- Agriculture

- Block chain
- 3D Printing
- IOT Engineering
- Car diagnosis system