INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal, Hyderabad - 500 043

IISP- IARE Innovation and Start-Up Policy

1. PREAMBLE:

Innovation and Entrepreneurship promotion and development is one of the major dimensions of the Institute strategy. To nurture the culture of Innovation within the campus institute created infrastructure for pre-incubation and incubation within campus. The institute Established Makers Space, Technology Innovation and Incubation Centre (TIIC), Science and Technology Start-Up Park Within the Innovation and Entrepreneurship arena. Also, ASPIRE- TBI centre established enabling the smart manufacture and common facilitation centre for social entrepreneurship for SC/ST women empowerment with the support of MSME and DST. This Pre-Incubation/Incubation is accessible to students and faculty of all disciplines across the institution. The financial institutions like MSME, CITD, NRDC and DST extending their support for resource mobilization. To facilitate development of an entrepreneurial ecosystem, institute allocates a separate fund for supporting innovation and Start-Ups related activities which is approximately 1.5% of total annual budget of institute. For expediting the decision making, hierarchical barriers are minimized and individual autonomy and ownership of initiatives is promoted.

The main objectives of IISP:

1. To nurture the culture of innovation at institute and across the state.

2. To assist and expedite the development of innovations into prototypes with emphasis on socio-economic effect and market demand.

3. To identify potential and prospective entrepreneurs among the students as well as faculty and provide them a platform to be successful.

4. To act as a catalyst for swift commercialization of technology developed by novice entrepreneurs.

5. To create a nexus between the academic, R & D institutions, industries and financial institutions.

2. THRUST AREAS FOR THE INTERVENTION:

1. Smart Manufacturing

2. Unmanned Aerial Vehicle

3. Waste Management

4. Internet of Things

5. Artificial Intelligence

6. Cyber Security and Data Science

7. Hybrid Electric Vehicles

8. Sensors and Embedded Systems

9. Agriculture and allied sector

10. Advanced Materials

11. Robotics and Automation

3. IARE INNOVATION AND START-UP POLICY:

The goal is to provide handholding support to student and faculty from Ideation level to venture creation. With the vision for providing high quality services through young entrepreneurs institute adopted this incubation policy for establishing a successful innovative entrepreneurship model. The scope of this document is to define the policies and procedures for the Innovation and Entrepreneurial eco-system at institute. This policy address the following

3.1 Strategies and Governance for promoting Innovation and Entrepreneurship

1. Establishment of Innovation and Entrepreneurial Eco-System, development and implementation at the institution is headed by faculty with entrepreneurship expertise to promote Start-Ups, entrepreneurship and innovation in the Institute.

2. Importance of innovation, implementation of policy and entrepreneurial activities should be promoted among the students and faculty by organizing motivational talks, seminars, Ideation, workshops, Ideathons, Hackathons, EDP, TEDP, etc.

3. Institute allocate a separate fund for supporting innovation and Start-Ups related activities which is approximately 1.5% of total annual budget of institute.

4. The policy is presumed to nurture innovation, investment in R&D, infrastructure, knowledge creation, technological development and skilled manpower through collaboration with industries and financial institutions resulting in high growth entrepreneurial ventures.

5. Extending support to social entrepreneurship for a positive social impact and inclusion.

6. Allowing start-ups to define, develop and follow best practices that ensure the business activities are conducted effectively without adding unnecessary risks.

7. Ensuring that organizations are run in a transparent, ethical manner, promoting good business practice.

3.2 Start-Ups Enabled Infrastructure facilities

1. Creation of pre-incubation and incubation facilities in the institute by using internal and external resources.

2. Innovation centre may be a separate entity registered as a section-8 company or society registered under society registration act with independent governance structure.

3. Pre- Incubation / Incubation will be accessible 24/7 to all students and faculty across the intuition to bridge the gap between innovators and incubators.

Facilities:

S.No	Name of the Centre	Year of Estd.	Facilities
1	Technology Innovation and Incubation Centre	2016	• Co-working Space • Meeting rooms • Computers with High Speed Internet • Printers and Scanner • Cafeteria
2	Science and Technology Start-Up Park	2015	• Cubicles • Computers with High Speed Internet • Meeting rooms • Library with access to database

3	ASPIRE- TBI	2019	Plant and machinery rapid prototyping
4	Makers Space	2016	• Computer facility with necessary soft wares • 3D Printing Machine • PCB prototyping machine • Tools & Equipment for prototyping
5	Community Innovation Center	2019	• Common facility for social entrepreneurship • Machinery for Textile and Design sector

3.3 Nurturing Innovations and Start-Ups:

In order to facilitate the new Start-Ups, the IISP would

1. Encourage and motivate the students of our institution to do the innovative projects in order to promote technology Start-Ups.

2. Facilitate the students to exchange their new innovative thoughts and ideas, and to collaborate across various disciplines in the institution.

3. Provide sufficient spaces & built up area with all facilities for accommodating new Start-Ups on lease basis.

4. Provide services such as business advice, financial counselling, assistance with business management and accounting, legal and regulatory guidance, access to mentors etc.,

5. Provide early stage / idea to SIPP (Student Innovative Project Proposal) funding.

6. Encourage Start-Ups which may need early stage funding to stimulate commercialization of research discoveries and to help in validating proof of concept and subsequently to assist them to cover costs like certification, manufacturing pilot services etc.,

7. Promote capacity building through exposure visits and organizing facilitation workshops.

8. Organize Start-Up festivals to create an exhilarating climate to inspire innovation.

9. Provide technical services that include R&D activities, product development, re-engineering,

10. calibration and testing facilities, quality assurance and market research to the Start-Up business.

11. Provide mentorship assistance to the Start-Up student entrepreneurs of our institution by inviting the government officials from MSMEs, EDIs, successful alumni entrepreneurs and other related field experts to our institution.

12. Provide learning resources, laboratory facilities and other services of the institution for the benefit of their operation.

13. Provide seed funding to the Start-Up business with lesser rate of interest.

14. Assist & help the Start-Up student entrepreneurs to get subsidies & incentives from government where ever possible.

3.4 Product Ownership Rights of all Technologies Developed at Institute

When institute 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 institute. The detailed product ownership rights are mentioned in institute IPR policy.

3.5 Organizational Capacity, Human Resources and Incentives

1. One of the best practices adopted by institute is encouraging students and faculty to create their own ventures through experiential engineering education.

2. Faculty with entrepreneurial mindset are deputed to training programmes focusing Innovation and Entrepreneurship.

3. In order to attract and retain right people, institute developed academic and non-academic incentives and reward mechanisms for all faculty and stakeholders that actively contribute and support entrepreneurial activities.

3.6 Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute Level

1. The institutional major agenda is to ensure the students and faculty are exposed to innovation and pre-incubation activities.

2. Students/ Staff are taught the ways to solve the problems of the society and consumers.

3. The institute signed MOU's with notable industries to create a Link between the incubation centre and companies to foster the integration of education activities with enterprise-related activities.

3.7 Norms for Faculty & Students Driven Innovations and Start-Ups

This policy permits faculty and students to transform the ideas based on IPR owned / co-owned by them for running Start-Up Company. Faculty Start-Up may a faculty member alone or with students or with faculty of other institutes or alumni or with other entrepreneurs. The following mechanisms are evolved for running such a company within the Institute

For Faculty

1. The Institute may provide space, infrastructure, mentorship support, seed funds, support for accounts, legal, IPRs etc. for the Startup company owned by Faculty and staff. In return for the services, the Institute may take 2.0 – 9.5 % equity / stake in the company (As per the policy guidelines of the state government and affiliated university).

2. If a faculty member is an Owner or Co-owner of such companies with the permission of the Institute and be a Director on the Board, he / she may also play an operational role (Technical Adviser, CEO, Manager etc.,) with the approval of the Institute with the conditions given below:

   - No restriction on the shares that faculty / staff can hold, as long as they do not spend more than 20 % of office time on the Start-Up company in the role mentioned and do not compromise in their academic and administrative work / responsibilities.

   - Faculty must clearly separate and distinguish on-going research work at the Institute from the work conducted at the Start-Up / company.

   - Faculty must not involve research staff or other staff of institute in the activities of the Start-Up and vice versa.

3. In case the faculty / staff holds the executive or managerial position for more than six months in Start-Up company, they should be on sabbatical /leave without pay/ or utilize existing leave.

4. Other Faculty members may undertake projects from the company owned by a faculty member / staffs following the Institute norms of consultancy projects that prevails. Similarly, for the utilization of any testing / characterization of product developed by the company it should be as per the norms of the Institute testing charges.

5. The IP Rights for the technology developed by the company and faculty as per the IPR Policy of the institute.

6. A Company owned or co-owned by a faculty/ staff will normally be required to incubate at the Institute incubator. However, in exceptional cases, where the faculty / staff /wants to incubate outside the institute, a sufficient justification has to be provided for the approval of the Institute. Decision of the Institute is final and binding in this case.

7. For the incubation of the Company owned or co-owned by a faculty / staff evaluation should be as per the incubation policy of the existing incubator in the Institute.

For Students

Institutes are requested to encourage as many Start-Ups by the students with inter departmental and inter-institutional participation, taking note of the fact that Start-Up planning and management requires inter-disciplinary skills. Students should be encouraged to develop entrepreneurial mindset through experiential learning by exposing them to training in cognitive skills 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 should be routinely organized. The Institute shall prepare the students for creating Start-Up through the above activities.

1. Institute may allow students to establish Start-Up or working part time for the Start-Up already present with the Institute Incubator while studying / working as intern.

2. Students may be allowed to earn credits for working on innovative prototypes / Business Models as per the Regulations of study and approved by the concerned committee.

3. Students may be allowed to opt for Start-Up in place of their mini project, seminars, summer trainings with the approval of concerned department committee.

4. Students may be permitted to use the Start-Up idea / prototype development as their major project work for the Institute academic requirements with the approval from the affiliated Incubator.

5. Students who are under incubation, but are pursuing some entrepreneurial ventures while studying may be allowed to use their address in the institute to register their company with due permission from the institution.

6. Students entrepreneurs may be allowed to sit for the examination, even if their attendance is less than the minimum permissible percentage as per the Regulations of the Institute along with due permission from the institute.

7. Institute may allow their students to take a semester/year break (or even more depending upon the decision of review committee constituted by the institute) to work on their start-ups and re-join academics to complete the course. Student entrepreneurs may earn academic credits for their efforts while creating an enterprise.

8. Institute may set-up a review committee (Senior faculty in charge of EDC, HOD of the Student Department, CEO of Incubator and Principal of the Institute) for review of student startup by students, and based on the progress made, it may consider giving appropriate credits for academics.

3.8 Collaboration, Co-creation, Business Relationships Knowledge Exchange

1. Institute has a team of Potential partners, Resource organizations, Micro, Small and Medium sized Enterprises (MSMEs), Social enterprises, Schools, Colleges, Alumni, Professional bodies and Entrepreneurs to support Entrepreneurship and co-design the programs. This will create co-creation, bi-directional flow / exchange of knowledge among the faculty and students.

2. Guidelines are developed for both internal and external stakeholders for managing the relationships among all faculty and students.

3. An opportunity will be given to connect with the external environment through knowledge sharing in ways such as internships, teaching and research exchange programmes, clubs, social gatherings etc.

3.9 Entrepreneurial Impact Assessment

Impact Assessment for pre-incubation, incubation, entrepreneurship education is formulated with well-defined evaluation parameters. The entrepreneurial assessment will be done by monitoring and evaluation of knowledge exchange initiatives and exchange of all departments and faculty in the entrepreneurial teaching and learning. The support system provided and the number of Start-Ups created and new business relationships established in the Institute should be recorded and used for impact assessment. The key performance indicators are used to measure the entrepreneurial impact assessment.

Hierarchy of Objectives	Key Performance Indicators (KPIs)	Means and Verification
Vision	• 5% Increase in Self-Employment Rate • 5 Established Start-ups	ARIIA, NIRF Rankings
Goal /Impact	• Enable Environment with multiple level of support for innovation & Entrepreneurship in IARE • 5% of Graduate students will choose Entrepreneurship as career • 10% of Student and Graduates Practice Entrepreneurship	• Biannual Survey • ARIIA, NIRF Rankings
Outcomes	• 25% of student & faculty mass with entrepreneurship Orientation • 12% of Student & faculty motivated to start any entrepreneurial activity • 5 number of IPR/Innovations developed for commercialization • 5 number of Student / Early-Stage Start-ups formed • 12% of In-house Expert Capacity available for Advisory Services • Network Established with connecting multiple stakeholders & Ecosystem Enablers	• Biannual Survey • Quarterly News Letter
Outputs	• 25% of Student & faculty mass exposed to awareness/orientation building programs • 25% of Students covered through entrepreneurship Education; MOOC, Class Room, Experiential Learning programs etc. • 250 of beneficiaries are accessing the infrastructure & facilities per day, month &	• Biannual Survey • Monthly progress report

	Year	
	• 50 of innovators identified; 25 of awarded / recognised; 25 of Supported	
	• 5 number of Student projects turns to (commercialize) Innovations	
	• 5 number of IPR based product/services generated and registration filed	
	• 12% of in-house trained professional developed for advisory services	
	• 5 articles on Entrepreneurship published	
Activities	• 5 Education/Skill certification program on Entrepreneurship, IPR, Innovation etc.	• Biannual Survey
	• 25 of workshops, awareness, market outreach events, orientation, advocacy meetings etc.	• Quarterly News Letter
	• 12 of networking event (Intra and Inter-institutional, enablers, stakeholders) organized	• Monthly progress report
	• 5 of skill and competency development training programs/FDPs/EDPs organised	• Review Meetings
	• 5 of research studies related to Entrepreneurship conducted	
	• 01 of national and regional award and campus Hackathon like events organized	
	• Incentivizing Entrepreneurship and Innovation; services and facilities; Start-up Manual, policies, tool kits etc.	
	• 1% of total budget/year spend against total institution revenue for start-up	
	• Budget allocation and Spend ratio for the start-up mandate in institute	

4. SELECTION CRITERIA:

The criteria used to assess planned customers all through the application procedure ought to be founded on the mission and targets of the incubator and be perfect with the expansive blend of the advancements bolstered by the incubator.

Recommended essential assessment criteria include:

1. The business must be an innovation related firm creating products or services that can be marketed within three years. Perfect assembling firms that meet these criteria would likewise be qualified to apply, given their space needs are fulfilled by the incubator office.

2. The business must be in beginning periods of advancement. Generally, beginning period includes the first two years of business operations.

3. The candidate must show capacity to pay incubator rents while they create positive income.

4. The candidate must have an administration group that the CIO feels can deal with the specialized parts of the business. The administration group ought to have entrepreneurial business astuteness or acknowledge counsel from an incubator built up admonitory board.

5. The candidate business must accept counsel from the expert system as well as the CIO.

6. The product or services the candidate plans to provide through the incubator must be specialized and address the needs of one specific sector. The incubates should also give financial advantages to the region including creating new occupations and open doors for zone providers and sellers.

7. The candidate must also give the total number of incubation hours required per week and expected duration of the project.

5. EXIT POLICY:

The exit of any Start-Ups from Incubation Centre may result:

1. On completion of duration of the project (Maximum duration for any Start-Up will be 3 years.)

2. Non performance or under performance of the business venture

3. When the number of employees of the company exceeds 20

4. When the annual turnover of the company exceeds Rs. 2 cores

5. Violation of any institute policy

6. Any other reason for which institute finds it necessary for the Start-Up to leave

6. FINANCIAL STRATEGY:

Institute's efforts and processes to make for financially successful entrepreneurship will be as follows:

Financial Honour / Privilege

1. Institute can set up its own fund or create a fund with the help of multiple stakeholders to assist Start-Ups approved and admitted to the programme at a very early stage.

2. Institute will provide financial support to individual student Start-Ups on a merit-based basis within the scope of the availability of funds.

3. Institute will also collaborate with different states Governments. When the students are ready with a Minimum Viable Product (MVP), Institute will help students receive seed funding at their early stage of initiation.

4. Institute will develop partnerships with external angel networks, incubators, alumni and help connect relevant derivatives to them to assist student Start-Ups on a real-time basis wherever they are in need.

5. Institute shall support the undertakings involved in the programme in various forums, including the financing of events and programmes. To ensure this, a minimum of 1% of the total annual budget of the institution would be allocated for funding and supporting innovation and Start-Ups related activities through the creation of separate 'Innovation fund' and managed by the CIO..

6. The Institute would also reach out to external funding agencies of government (state and central) such as DST, MHRD, AICTE, DSIR, MSME, NSTEDB, NRDC, Start-Up India, Invest India, MeitY, etc. and non-government sources.

7. SEED FUND SUPPORT

The institute provide a fund up to Rs. 2.5 Lakhs for Product Development and Rs. 7.5 Lakhs for commercialization and a fellowship of Rs.5000 per months in incubation period for all the eligible students. The faculty also supported with a seed fund of Rs. 5 Lakhs from Ideation level to venture creation. The seed fund support for Alumni and community innovators will be provided based on agreement between institute and incubate.

The seed Investment shall have the following stages:

1. Incubate Apply for Seed
2. Application Assesses with initial interaction
3. Feedback and guidance on application by internal team
4. Presentation to Evaluation Committee
5. Confirmation for Seed Fund
6. Processing the formalities and agreement
7. Disbursement in Phase- I Fund
8. Periodic Assessments
9. Release of fund in other phases

8. Glossary:

Accelerators	Startup Accelerators design programs in batches and transform promising business ideas into reality under the guidance of mentors and several other available resources.
Angel Fund	An angel investor is a wealthy individual who invests his or her personal capital and shares experiences, contacts, and mentors (as possible and required by the startup in exchange for equity in that startup). Angels are usually accredited investors. Since their funds are involved, they are equally desirous in making the startup successful.
Cash flow management	Cash flow management is the process of tracking how much money is coming into and going out of your business.
Co-Creation	Co-creation is the act of creating together. When applied in business, it can be used as is an economic strategy to develop new business models, products and services with customers, clients, trading partner or other parts of the same enterprise or venture.
Compulsory Equity	An equity share, commonly referred to as ordinary share also, represents the form of fractional or part ownership in which a shareholder, as a fractional owner, undertakes the maximum entrepreneurial risk associated with a business venture. The holders of such shares are members of the company and have voting rights.
Corporate Social Responsibility	Corporate social responsibility (CSR) is a self-regulating business model that helps a company be socially accountable – to itself, its stakeholders, and the public.
Cross-disciplinary	Cross-disciplinary practices refer to teaching, learning, and scholarship activities that cut across disciplinary boundaries.
Entrepreneurial culture	A culture/ society that enhance the exhibition of the attributes, values, beliefs and behaviours that are related to entrepreneurs.
Entrepreneurial Individuals	An Individual who has an entrepreneurial mindset and wants to make his/her idea successful.
Entrepreneurship	Entrepreneurship education seeks to provide students with the education knowledge, skills and motivation to encourage entrepreneurial success in a variety of settings
Experiential learning	Experiential learning is the process of learning through experience, and is more specifically defined as learning through reflection on doing

Financial management	Financial Management is the application of general principles of management to the financial possessions of an enterprise.
Hackathon	A hackathon is a design sprint-like event in which computer programmers and others involved in software development, including graphic designers, interface designers, project managers, and others, often including domain experts, collaborate intensively on software projects.
Host Institution	Host institutions refer to well-known technology, management and R&D institutions working for developing start-ups and contributing towards developing a favourable entrepreneurial ecosystem.
Incubation	Incubation is a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development
Intellectual Property (licensor)	A licensing is a partnership between an intellectual property rights owner and another who is authorized to use such rights (licensee) in exchange
Rights Licensing Pedagogy and Experiential	It refers to specific methods and teaching practices (as an academic subject or theoretical concept) which would be applied for students working on startups. The experiential learning method will be used for teaching 'startup related concepts and contents' to introduce a positive influence on the thought processes of students. Courses like 'business idea generation' and 'soft skills for startups' would demand experiential learning rather than traditional class room lecturing. Business cases and teaching cases will be used to discuss practical business situations that can help students to arrive at a decision while facing business dilemma(s). Field based interactions with prospective customers; support institutions will also form a part of the pedagogy which will orient the students as they acquire field knowledge
Pre-incubation	It typically represents the process which works with entrepreneurs who are in the very early stages of setting up their company. Usually, entrepreneurs come into such programs with just an idea of early prototype of their product or service. Such companies can the graduate into full-fledged incubation programs
Prototype	A prototype is an early sample, model, or release of a product built to test a concept or process
Science parks	A science park, also known as a research park, technology park or innovation centre, is a purpose-built cluster of office spaces, labs, workrooms and meeting areas designed to support research and development in science and technology.
Seed fund	Seed fund is a form of securities offering in which an investor invests capital in a startup company in exchange for an equity stake in the company.
Special Purpose Vehicle	Special purpose vehicle, also called a special purpose entity, is a subsidiary created by a parent company to isolate financial risk. Its legal status as a separate company makes its obligations secure even if the parent company goes bankrupt.
Startup	An entity that develops a business model based on either product innovation or service innovation and makes it scalable, replicable and self-reliant and as defined in Gazette Notification No. G.S.R. 127(E) dated February 19, 2019.
Technology Business Technology Business incubator (TBI)	Technology Business Technology Business incubator (TBI) is an entity, which helps technology-based startup businesses with all the necessary resources/support that the startup needs to evolve and grow into a mature business.

Technology Commercialization	Technology commercialization is the process of transitioning technologies from the research lab to the marketplace.
Technology licensing	Agreement whereby an owner of a technological intellectual property (the licensor) allows another party (the licensee) to use, modify, and/or resell that property in exchange for a compensation.
Technology management	Technology management is the integrated planning, design, optimization, operation and control of technological products, processes and services
Venture Capital	It is the most well-known form of start up funding. Venture Capitalists (VCs) typically reserve additional capital for follow-up investment rounds. Another huge value that VCs provide is access to their networks for employees or clients for products or services of the startup

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