



Shri Vile Parle Kelavani Mandal's

# Dwarkadas J. Sanghvi College of Engineering



MoE's  
INNOVATION CELL  
(GOVERNMENT OF INDIA)



## DJSCE Innovation and Startup Policy

For

Students and Faculty Members

2021



Shri Vile Parle Kelavani Mandal's

**Dwarkadas J. Sanghvi College of Engineering**

(Autonomous College Affiliated to the University of Mumbai)

NAAC Accredited with "A" Grade (CGPA : 3.18)



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## Committee for 'DJSCE Innovation and Startup Policy'

Sr.No	Name and Designation	
1.	<b>Dr. Hari Vasudevan</b> Principal, DJSCE-Mumbai	Chairman
2.	<b>Dr. Ashish Daptardar</b> Vice Principal-Admin, DJSCE-Mumbai	Member
3.	<b>Dr. Manali Godse</b> Vice Principal-Academics, DJSCE-Mumbai	Member
4.	<b>Dr. Rajendra Khavekar</b> Training and Placement Officer, DJSCE-Mumbai	Member
5.	<b>Dr. VijayaKumar Kottur</b> HoD-Mech, DJSCE-Mumbai	Member
6.	<b>Mr. C M Venkateswaran</b> Director, Subsea India Management Aker Solutions	Member
7.	<b>Dr. Guruprasad Rao</b> Director & Mentor Imaginarium (India) Pvt Ltd. Mumbai	Member
8.	<b>Mr. Jugal Choksi</b> Co-founder, Intern Theory Career Solutions LLP	Member
9.	<b>Prof. Pavan Rayar*</b> Assistant Professor Department of Mechanical Engineering	Member & *NISP Coordinator
10.	<b>Mr. Sunil Desai</b> Director Design Cell CAD/CAM Solutions Pvt Ltd Mumbai	Member
11.	<b>Dr. Sunil Karamchandani*</b> Associate Professor Department of Electronics and telecommunication Engineering	Member, *IIC-Incharge



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**Implementation Team for 'DJSCE Innovation and Startup Policy  
at Institute level.**

Sr.No	Name and Designation	
1.	<b>Dr. Sunil Karamchandani</b> Associate Professor Department of Electronics and telecommunication Engineering	Member, IIC-Incharge
2.	<b>Prof. Shashikant Auti</b> Assistant Professor Department of Mechanical Engineering	Intl. Member
3.	<b>Prof. PavanRayar*</b> Assistant Professor Department of Mechanical Engineering	Member, *NISP Coordinator
4.	<b>Prof. Pratik kanani</b> Assistant Professor Department of Computer Engineering	Intl. Member
5.	<b>Prof. Mayur Parulekar</b> Assistant Professor Department of Electronics Engineering	Intl. Member
6.	<b>Prof. Harshal Dalvi</b> Assistant Professor Department of Mechanical Engineering	Intl. Member
7.	<b>Dr. Meeta Gandhi</b> Assistant Professor Department of Production Engineering	Intl. Member
8.	<b>Prof. Kartik Ajugia</b> Assistant Professor Department of Mechanical Engineering	Intl. Member
9.	<b>Dr. Vaibhavi Sonetha</b> Assistant Professor Department of Bio Medical Engineering	Intl. Member
10.	<b>Prof. Kriti Srivastava</b> Assistant Professor Department of Comp Science and Engineering (Data Science)	Intl. Member
11.	<b>Prof. Rahul Taware</b> Assistant Professor Department of Electronics and Telecommunication Engineering	Intl. Member

## Preamble

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The MHRD's Innovation Cell (MIC) and the All India Council of Technical Education (AICTE) held Orientation Programs on the theme "Orientation and Adoption of NISP at HEI Level" with the learning objective to help us grasp our current position and engagement in streamlining and enhancing the institute's innovation and startup ecosystem, in the month of August 2020.

Dwarkadas J Sanghvi college of Engineering constituted an eleven member committee according to MIC instructions to brainstorm and develop DJSCE Innovation and Startup Policy to address the need for inculcation of innovation and entrepreneurial culture in the institute. This committee deliberated on various facets for nurturing innovation and Startup culture in DJSCE, which covered Intellectual Property ownership, revenue sharing mechanisms, norms for technology transfer & commercialization, equity sharing, etc. After several rounds of discussions, "DJSCE Innovation and Startup Policy" for students and faculty members of DJSCE was prepared.

## Vision

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India aspires to become 5 trillion-dollar economy by 2024. To reach the mark, it needs to evolve systems and mechanisms to convert the present demographic dividend into high quality technical human resource capable of doing cutting edge research and innovation and deep-tech entrepreneurship.

The DJSCE Innovation and Startup Policy is a guiding framework to envision an educational system oriented towards start ups and entrepreneurship opportunities for students and faculty members. The guidelines provide ways for developing entrepreneurial agenda, managing Intellectual Property Rights (IPR) ownership, technology licensing and equity sharing in Startups or enterprises established by faculty and students.

***To encourage a "culture of innovation and entrepreneurship" that leads to greater knowledge and employment in our society by creating a "knowledge-driven Startup ecosystem."***

# DJSCE Innovation and Startup Policy for Students and Faculty

## 1. Strategies and Governance

- a. To facilitate development of an entrepreneurial ecosystem in the organization, specific objectives and associated performance indicators shall be defined for assessment.
- b. Implementation of entrepreneurial vision at the institute shall be achieved through DJSCE Innovation and Startup Policy Implementation Team.
- c. Resource mobilization plan shall be worked out at the institute for supporting pre-incubation, incubation infrastructure and facilities. A sustainable financial strategy shall be defined in order to reduce the organizational constraints to work on the entrepreneurial agenda.
  - a. Investment in the entrepreneurial activities shall be a part of the institutional financial strategy. Minimum 1% fund of the total annual budget of the institution should be allocated for funding and supporting innovation and startups related activities through creation of separate 'Innovationfund'.
  - b. The strategy shall also involve raising funds from diverse sources to reduce dependency on the public funding. Bringing in external funding through government (state and central) such as DST, DBT, MHRD, AICTE, TDB, TIFAC, DSIR, CSIR, BIRAC, NSTEDB, NRDC, Startup India, Invest India, MeitY, MSDE, MSME, etc. and non-government sources should be encouraged.
  - c. The institute may approach private and corporate sectors to generate funds, under Corporate Social Responsibility (CSR) as per Section 135 of the Company Act 2013.
  - d. Institute may also raise funding through sponsorships and donations.
  - e. Institute shall actively engage alumni network for promoting Innovation & Entrepreneurship (I&E).
- d. To promote entrepreneurial qualities institutional programs such as conferences, convocations, workshops, etc. will be conducted
- e. Student and faculty startup Policy and action plan shall be formulated at the Institute level, which is in line with the current document along with well-defined short-term and long-term goals. Micro action plan shall also be developed to accomplish the policy objectives.
- f. Product to market strategy for startups should be developed by the institute on a case to case basis.
- g. Development of entrepreneurship culture will not be limited within the boundaries of the institution.
  - a. Workshops and competitions will be organized which will give opportunity for regional startups, provision to extend facilities for outsiders and active involvement of the institute in defining strategic direction for local development..
  - b. Strategic international partnerships shall be developed using bilateral and multilateral channels with international innovation clusters and other relevant organizations. Moreover, international exchange programs, internships, engaging the international faculty members from various esteemed institutions in teaching and research shall also be promoted.

## **2. Startups Enabling Institutional Infrastructure**

The following steps shall be followed to enable the Institutional Infrastructure

- a. Initially create Pre-incubation facility
- b. Upon admission in the incubation center, the required facilities (like Document scanner, Library, Internet, any specific machine etc) will be offered to the to-be incubated (incubatee) companies on chargeable/free basis as decided by the institute depending upon the facility required
- c. Mentoring and Advisory Services-One of the objectives of Incubation is to utilize the technical expertise and lab infrastructure of DJSCE. Thus, every incubatee that is offered incubation has to select one faculty from DJSCE who shall act as mentor of the incubatee and guide the company on product development.
- d. Product conceptualization to market strategy for Startups shall be handled by the institute on a case to case basis using the stages of Technology Readiness Level (TRL) scale. The Phases included are Startup Phase---Boot up Phase---scale up Phase and – Commercialize phase

## **3. Product Ownership Rights for Technologies Developed at Institute**

- a. 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 the inventors and the institute.
  - a. Inventors and institute 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. If one or more of the inventors wish to incubate a company and license the product to this company, the royalties would be no more than 4% of sale price, preferably 1 to 2%, unless it is pure software product. If it is shares in the company, shares will again be 1% to 4%. For a pure software product licensing, there may be a revenue sharing to be mutually decided between the institute and the incubated company.
- b. On the other hand, if product/ IPR is developed by innovators not using any institute 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 institute's alumni/ industry experts (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. Institute can use alumni/ faculty of other institutes as members, if they cannot find sufficiently experienced alumni/ faculty of their own.
- d. Institute IPR cell or incubation center will only be a coordinator and facilitator for providing services to faculty, staff and students. They will have no say on how the invention is carried out, how it is patented or how it is to be licensed. If institute is to pay for patent filing, they can have a committee which can examine whether the IPR is worth patenting. The committee should consist of faculty who have experience and excelled in technology translation. If inventors are using their own funds or non- institute funds, then they alone should have a say in patenting.

- e. All institute's decision-making body with respect to incubation / IPR / technology licensing will consist of faculty members and experts who have excelled in technology translation. Other faculty in the department / institute will have no say, including heads of department, heads of institutes, deans or registrars.
- f. The institutions should promote interdisciplinary research and publication on startup and entrepreneurship.

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

- a. Faculty and departments of the institutes have to work in coherence and cross-departmental linkages should be strengthened through shared faculty, cross-faculty teaching and research in order to gain maximum utilization of internal resources and knowledge.
- b. 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.
- c. Faculty and staff should be encouraged to do courses on innovation, entrepreneurship management and venture development.
- d. In order to attract and retain right people, institute shall develop academic and non-academic incentives and reward mechanisms for all staff and stakeholders that actively contribute and support entrepreneurship agenda and activities.
  - a. The reward system for the staff may include sabbaticals, office and lab space for entrepreneurial activities, reduced teaching loads, awards, trainings, etc.
  - b. The recognition of the stakeholders may include offering use of facilities and services, strategy for shared risk, as guest teachers, fellowships, associateships, etc.
  - c. A performance matrix should be developed and used for evaluation of annual performance

#### **5. Creating Innovation Pipeline and Pathways for Entrepreneurs at Institute 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, the following steps may be used
  - a. Spreading awareness among students, faculty and staff about the value of entrepreneurship and its role in career development or employability should be a part of the institutional entrepreneurial agenda.
  - b. Students/ staff should be taught that innovation (technology, process or business innovation) is a mechanism to solve the problems of the society and consumers. Entrepreneurs should innovate with focus on the market niche.
  - c. Students should 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 should be routinely organized.
  - d. To prepare the students for creating the start up through the education, integration of education activities with enterprise-related activities should be done.
- b. The institute has already established Institution's Innovation Councils (IICs) as per the guidelines of MHRD's Innovation Cell. IICs shall guide institutions in conducting various activities related to innovation, startup and entrepreneurship development. Collective and concentrated efforts shall be undertaken to identify, scout, acknowledge, support and reward proven student ideas
- c. For strengthening the innovation funnel of the institute, access to financing must be opened

for the potential entrepreneurs.

- d. Institute shall work towards developing a ready reckoner of Innovation Tool Kit, which will be kept on the homepage on institute's website to answer the doubts and queries of the innovators and enlisting the facilities available at the institute.

## **6. Norms for Faculty Startups**

- a. Role of faculty may vary from being an owner/ direct promoter, mentor, consultant or non-board member of the startup.
- b. Faculty startup may consist of faculty members alone or with students or with faculty of other institutes or with alumni or with other entrepreneurs.
- c. 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.
- d. Faculty must clearly separate and distinguish on-going research at the institute from the work conducted at the startup/ company.
- e. 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 institute) may be permitted to the faculty.
- f. Faculty must not accept gifts from the startup.
- g. Faculty must not involve research staff or other staff of institute in activities at the startup and vice-versa.
- h. Human subject related research in startup should get clearance from ethics committee of the institution.

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

- a. Institutes shall 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.
  - a. To encourage co-creation, bi-directional flow/ exchange of knowledge and people should be ensured between institutes such as incubators, science parks, etc.
  - b. Institute shall organize networking events for better engagement of collaborators and should open up the opportunities for staff, faculty and students to allow constant flow of ideas and knowledge through meetings, workshops, space for collaboration, lectures, etc.
- b. Knowledge exchange through collaboration and partnership shall be achieved by support mechanisms and guidance for creating, managing and coordinating these relationships.
  - a. Through formal and informal mechanisms such as internships, teaching and research exchange programmes, clubs, social gatherings, etc., faculty, staff and students of the institutes should be given the opportunities to connect with their external environment.
  - b. Connect of the institute with the external environment must be leveraged in form of absorbing information and experience from the external ecosystem into the institute's environment.
  - c. Single Point of Contact (SPOC) mechanism (NISP Coordinator) shall be in the institute for the students, faculty, collaborators, partners and other stakeholders to ensure access to information.



## **8. Pedagogy**

- a. The Departments shall be advised to change the course curriculum to be in tune with the emerging technologies and align to the requirements of the Industry and to introduce courses in entrepreneurship development through incubators.
- b. Industry Experts may be leveraged to teach courses at incubators and students who are interested may elect these courses.
- c. The evaluation provided by approved industry experts may be sent by the incubator to colleges for inclusion in the electives that students can learn as part of the degree course..
- d. Inviting national and international experts related to entrepreneurship on a regular basis to strengthen Startup efforts.

## **9. Entrepreneurial Impact Assessment**

- a. Impact assessment of institute's entrepreneurial initiatives such as pre-incubation, incubation, entrepreneurship education shall be performed regularly using well defined evaluation parameters.
- b. Monitoring and evaluation of knowledge exchange initiatives, engagement of all departments and faculty in the entrepreneurial teaching and learning should be assessed.
- c. Number of startups created, support system provided at the institutional level and satisfaction of participants, new business relationships created by the institutes should be recorded and used for impact assessment.
- d. Impact shall also be measured for the support system provided by the institute to the student entrepreneurs, faculty and staff for pre-incubation, incubation, IPR protection, industry linkages, exposure to entrepreneurial ecosystem, etc.
- e. Impact assessment for measuring the success shall 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.

**Amendment:** The Institute has every right to change, make additions or deletions to improve a text, piece of legislation, etc. time to time if necessary

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