RESEARCH & DEVELOPMENT POLICY

YASHODA SHIKSHAN PRASARAK MANDAL'S

YASHODA TECHNICAL CAMPUS

Approved by AICTE, Permanently Affiliated to DBATU, Lonere,

Affiliated to Shivaji University, Kolhapur.

Wadhe Satara-415011, Maharashtra, India

1

CONTENTS

RESEARCH AND DEVELOPMENT POLICY

1. Introduction

The Research & Development (R&D) cell integrates all the departments to facilitate the academic, sponsored-research, projects and consultancy services. The cell extends its full support to students/ staff/alumni/other-stakeholders through its facilities i.e., research labs, Center of Excellence (COE) innovation and incubation centers to present/publish papers in the conferences/journals of national/international repute which contributes towards academic transformation, professional and career advancement. The cell associates & sponsors various innovative research & development activities such as workshops, symposiums, seminars, conferences, research publications, projects, innovations, patents and IPR in diverse fields. The R&D activities also include skill cum technology up-gradation programs, startups, entrepreneurship and participation in various national/international technical competitions. The cell extends its support to start-up of new ventures.

The cell strives towards perfection and high-quality scientific research to contribute towards publications, prototypes and filing of IPR and to build research culture, to tap global potential, support to strengthen the knowledge foundation and promote the creation of new R&D applications in multi-disciplinary areas by using social innovation and rural/indigenous technology in support of Make in India and Digital India slogan of PMO and country.

Vision: To generate innovative and multi-disciplinary research through industrial collaboration to meet global needs by involving the all stakeholders.

Mission: Encourage and establish an eco-system for Research and Development activities through effective contributions of the stakeholders to actuate industry relevant innovative projects, prepare the research proposals, apply for funding agencies, publish papers, patents that leads to entrepreneurships and startups.

1.1 Objectives

1. Create zeal in staff/students to take-up multidisciplinary innovative research and publish papers in conferences/journals of national/international repute.

2. Strengthen the R&D center and get recognition from ISRO/DST/university/DRDO.

3. Sign M o U s with industries; collaborate with institutions of higher

learning and R & D organizations.

4. Foster scientific temper; assure R&D quality and ethical efficacy.

5. Create centers of excellence in niche/thrust/emerging areas of research.

6. Recommend for financial assistance for various R&D activities.

7. Identify and inform researchers about the appropriate research opportunities announced by different academic, research, and industry or government organizations.

8. Encourage students to undertake innovative projects and publish the same in reputed journals.

9. Provide scope for staff/students to work on latest technologies with industry.

10. Take-up testing/consultancy services in co-ordination with alumni, industry and stakeholders.

1.2 Research and Development Committee: A Research and Development Committee will be constituted in the institute. The committee will include Dean R&D, Coordinators from every department and a member secretary.

1.3 Frequency of Meeting: The Research and Development committee shall meet at least four times a year or as and when required. The member secretary in consultation with the chairman prepares and circulates the agenda of the meeting well in advance. The member secretary maintains the minutes of the meeting and action taken report.

1.4 Quorum: Two-third members constitute the quorum. If there is no quorum for the meeting convened up to half an hour, then the meeting shall stand adjourned to the next convenient day.

1.5 Term: The tenure of the members shall be three years.

1.6 Functions

1. Prepare the annual R&D action plan along with R&D incentive policy for various R&D activities/programs.

2. Obtain the budget approval for various activities from management.

3. Prepare a comprehensive list of funding agencies that allocate funds for R & D projects.

4. Motivate staff and students to publish papers/articles/manuscripts in conferences/journals of national/ international repute and to file/publish patents.

5. Encourage staff & students to prepare and submit R&D/AQIS/project proposals for funding by ISRO, DRDO, CSIR, DST, AICTE, UGC, MSME, hubs etc., within the stipulated time.

4

6. Formulate strategies for mutual benefit of stakeholders by fostering research collaborations in interdisciplinary areas of Industry/Govt./IITs/professional chapters to address societal needs.

7. Monitor R&D project progress of various departments through visits to identify bottlenecks and propose remedial actions.

8. Maintain close liaison with industry and undertake sponsored projects.

9. Organize national/international conferences/workshops/seminars/training programs in thrust areas to enhance the professional and research skills among the staff and students.

10. Promote self-employability skills through innovation, incubation and entrepreneurship.

11. Insist faculty members to publish their research work in Web of Science/Scopus indexed journals.

12. Maintain & update data of research, consultancy and extension activities of staff/students

13. Upload progress of R&D activities on the web portals of affiliating/accrediting/ranking agencies.

14. Constitute a review committee to adjudicate the originality & quality of the publications/projects/ consultancies/patents of staff/students and to recommend for incentives/appreciation and suggestions for improvement.

15. Consolidate the progress of R&D activities of all departments and submit report to the Director. Allocation of funds/seed-capital to various departments and staff members to take up R&D activities to established researchers both individually and also in groups.

16. Monitor the utilization of research funds appropriately as per sanctioned budget without any deviation.

17. Monitor the progress of R&D activities and send report in Gantt chart format to the Head.

18. Report on revenue generation by R&D projects/consultancies, open a separate bank account for each project and maintain all registers/records for audit by CA/IQAC/Director.

19. Perform any other duties as assigned by the Director / Head of the Institute from time to time.

1.7 Promotion of Research

The staff/students have free-access to R&D cell and choose the topic of their interest and also can provide free guidance to seek funds from various government

5

organizations/industries. The institute encourages the faculty, provide incentives for peer reviewed publications, consultancy works, writing books and filing patents. The institute takes care of complete patent filing process as per national/international IPR guidelines & policies to commercialize a product/prototype/ design/service. The R&D cell provides necessary eco-system/conducive-environment with infrastructure/expert support to staff/students to take-up R&D, consultancy, innovation and intellectual capital. Staff is responsible to apply for various R&D agencies through individual/institutional login and pursue their R&D projects.

1.8 Research at UG and PG Level

To enhance quality research outcome, mentorship/internship shall be facilitated to encourage UG/PG students to pursue research activities leading to tangible outcomes, such as publication, process, novel, prototype, design and functionality changes. Research component is already embedded in the curriculum at all levels/years of their academic/professional stay/association at the institute being a society member in various clubs/committees/cells/chapters/associations and also as a student member. The staff members of the institute shall provide suitable professional/ expert guidance in all spheres of student R&D activities.

The UG/PG students are encouraged to take up a module/content in the ongoing research projects funded by government agencies/industries with the support of investigators. Those students who are the part of funded projects should transfer know-how to other UG/PG students for further research.

2. Seed Funding:

Seed funding policies for minor projects at the institute level often aim to support initial research or development activities by providing small grants to faculty, students, or research teams. Here's a general structure such a policy might follow:

2.1. Objective of Seed Funding

- To support new and innovative research ideas that can potentially lead to larger projects.

- To encourage faculty and students to pursue early-stage research without needing external grants.

- To foster interdisciplinary collaboration and exploratory studies that align with the institute's strategic goals.

2.2. Eligibility Criteria

- Applicants: Open to full-time faculty members, research scholars, and sometimes senior students with the recommendation of a faculty advisor.

- Project Type: Minor research or development projects with a clearly defined scope, timelines, and potential for scaling or applying for external funding later.

2.3. Funding Amount and Duration

- Typically, the funding amount is modest, often ranging from INR 5000 to INR 30000, depending on the Institute's budget and priorities.

- The duration is generally short-term, such as 6 to 12 months, to allow for preliminary studies, prototype development, or pilot experiments with periodic progress presentations.

2.4. Application Process

- **Proposal Submission:** Applicants submit a concise proposal outlining the project objectives, methodology, budget, timeline, and expected outcomes in terms of IP, publication, start-ups, and product development.

- **Review and Approval:** A committee (often made up of senior faculty) reviews proposals based on criteria such as innovation, feasibility, and alignment with the institute's research priorities.

- **Approval Timeline:** Institute usually aims for quick approval to expedite early-stage research, with a review period of 2 to 4 weeks.

2.5. Evaluation Criteria

- **Innovation and Originality:** The potential of the project to contribute new knowledge or solutions in the defined area.

- **Feasibility and Clarity:** Well-defined objectives, methodology, and achievable outcomes.

- **Budget Justification:** A clear, reasonable budget aligned with project requirements.

- **Impact:** Potential to contribute to academic knowledge, societal impact, or future funding.

2.6. Disbursement and Financial Management

- Funds are often disbursed in phases—an initial portion upon approval and the remainder based on progress reports.

- Recipients are required to adhere to the institute's financial regulations, with oversight to ensure proper usage.

2.7. Progress Monitoring and Reporting

- Regular progress reports (typically mid-term and final) are required to assess if the project is on track.

- A final report upon completion, including a summary of outcomes, potential applications, and any publications or presentations, is generally mandatory.

2.8. Expected Outcomes and Continuation Opportunities

- Successful projects may receive support for further development or guidance on seeking larger, external grants.

- Institutes may also offer opportunities for these projects to be showcased at internal research forums or conferences.

This policy ensures accountability while providing the flexibility researchers need to explore early-stage ideas.

3. Research Centers

The institute has a number of research centers to strengthen the Research and Development (R&D) activities, employability for UG/PG students/staff. Establish new curriculum/additional labs to strengthen the research-culture in staff/students in different domains to improve industry- institute-interaction.

3.1 Research Laboratories

The following research laboratories and Centers of Excellence are established in the college to train the students in advanced technologies to carry out the research work.

a) **Square Wave Lab:** This Lab gives the opportunity to the students to validate their knowledge and skills Hand-on experience of work and wide exposure during study period and also create & assure new opportunities for our students in the job market.

b) **CAD Lab (Solid Works):** Construct solid Models with the help of Solid Modeling package

(Solid Works)

c) **Mechanical Workshop**: equipped with CNC lathe, conventional lathe, welding shop to carry out project related activities.

d) **Pharmaceutical Labs:** Equipped with experimental set-ups for Pharmacy

3.2 Minor Research Projects

The institute encourages & support staff & students to take-up minor research projects as detailed below:

a. Student projects are partially supported on recommendation of respective guide/supervisor/ investigator based on potentiality of the project based on Institute budget under this category for duration of one semester/year on approval of R&D cell provided the project outcome would be an IP or publication or a promoting business start-up or even a product or an equipment useful for the institution or an industry.

b. The disbursement of sanctioned amount and completion of the project is the sole responsibility of guide/supervisor/investigator and may utilize the facilities, infrastructure and human resources of the institution.

c. The amount should be paid by respective guide/supervisor/investigator directly to the vendor after proper negotiations and submit the bill to the accounts department through proper channel to R&D cell.

d. The guide/supervisor/investigator has to submit the periodical progress report of the approved research project to the R&D cell.

e. The amount should not be used either for remuneration or honorarium purpose.

3.3 Major Research Projects

YSPM supports all major projects as detailed below on approval from the Director.

a. The major projects are sanctioned to the staff based on the recommendations of the R&D cell
b. Regular progress reports are to be submitted through HOD to R&D cell for review/guidance.
c. All the equipment purchased, fabricated-prototypes shall be the property of the institute only.
d. UG/PG student projects may be carried out from major research projects.

3.4 Sponsored Research Projects

The staff-research-proposals are to be submitted to R&D cell for scrutiny and further submission to the funding agencies such as AICTE, UGC, DST, etc. The institute supports the execution of a R&D project in all manners. The funds must be credited into the college bank account from the sanctioned R&D organization and covers all the heads of budget proposal without any deficiency. No deviations of any nature are allowed and shortage of funds met through honorarium and remuneration. However, escalations of cost of executing a project beyond control shall be brought to the notice of the Director for further action and approval. Any staff member can collaborate in any major research project for publications/IP generation. UG/PG students must be involved in the sponsored research projects and can be remunerated if possible based on the outcome of the project.

3.5 Collaborative Research Projects

(i) **Industry Sponsored Research Project:** A public/private sponsored projects can utilize experts of the institution concerned to conduct research. If any patent is registered and granted, then there shall be a sharing of income generated from patent among the industry, researcher and institute. This will lead to following benefits:

a. The researcher will get an exposure to the concerned area of research.
b. The industry will get solutions to their problem.
c. The researcher, institute and industry can get the end-benefits.
d. The society is ultimate beneficiary with new R&D product or service.

(ii) **Multi/Inter disciplinary Research:** Interdisciplinary/multidisciplinary research is the need of the hour. No department, institution, researcher or scholar can alone address any problem. The end results of R&D can only be derived with proper interaction between and amongst various other discipline faculties. The institute

10

motivates all the staff members to involve in multi/inter disciplinary R&D activities. The following actions are in vogue:

a. Identify the multi/inter disciplinary R&D areas.

b. Identify the experts from various disciplines to work together on projects.

c. Study the infrastructure requirement of various disciplines.

d. Explore possibilities to find other resources for such multi/inter disciplinary research.

(iii) **Inter-institutional Research:** The staff members are encouraged to prepare the proposals in collaboration with well-established research institutes such as Universities, NITs, IIITs, IITs, and other organizations having similar interest. The staff may act as Principal investigator/Co-investigator depends on their contribution towards the research.

4. Incubation Facility:

The development of an incubation center at an institute is a strategic initiative designed to foster innovation, entrepreneurship, and economic growth by supporting startups and early-stage ventures. Here's a typical framework for developing and implementing an incubation center:

4.1. Define the Objectives

- **Encourage Entrepreneurship:** Inspire students, faculty, and alumni to pursue entrepreneurship and innovation.

- **Support Innovation:** Provide a structured environment where novel ideas can be explored, tested, and developed.

- **Create Industry-Academic Links:** Foster collaboration with industries for real-world insights and support.

- **Contribute to Economic Development:** Generate employment opportunities and economic value through successful startups.

4.2. Identify Target Audience and Sectors

- **Audience:** Primarily students, faculty members, researchers, and alumni with promising business ideas or prototypes.

- **Focus Sectors:** Based on the institute's strengths (e.g., technology, biotechnology, healthcare, energy), align the incubation center's resources and expertise with specific sectors to better support startups in these areas.

4.3. Set Up the Infrastructure

- **Space and Facilities:** Provide physical workspaces, meeting rooms, and collaborative areas for startups.

- **Technology and Resources:** Offer high-speed internet, office equipment, labs, and prototyping facilities (e.g., 3D printing).

- **Specialized Labs:** For technical institutions, setting up industry-grade labs with tools and equipment relevant to the focus sectors can be critical.

4.4. Develop Support Services

- **Mentorship and Guidance:** Develop a network of mentors from academia and industry who can guide incubated startups on technical and business challenges.

- **Training and Workshops:** Provide regular training sessions on entrepreneurship fundamentals, product development, marketing, finance, and legal requirements.

- **Business and Legal Support:** Offer support for business registration, intellectual property rights, contract drafting, and other legal services.

- **Market Access and Networking**: Facilitate connections with potential customers, suppliers, investors, and strategic partners through events, networking sessions, and expos.

4.5. Establish Funding Mechanisms

- **Seed Funding:** Provide initial seed funding or grants to promising startups within the incubation center.

- **Investor Access:** Establish partnerships with venture capitalists, angel investors, and financial institutions willing to support startups.

- **Government and Private Sector Funding:** Tap into government grants and industry sponsorships to create a diversified funding pool.

4.6. Develop an Application and Selection Process

- **Application Portal:** Create an online portal where potential entrepreneurs can apply to the incubation center.

- **Selection Criteria:** Develop clear criteria for selecting startups, such as innovation potential, feasibility, market need, and alignment with the incubation center's objectives.

- **Review Panel:** Form a selection panel with academic, industry, and entrepreneurship experts to evaluate applications and provide feedback.

4.7. Implement a Structured Incubation Program

- **Pre-incubation:** Offer support for idea validation, market research, and prototype development for early-stage ideas.

- **Incubation:** Guide startups through the development, testing, and refinement of their products or services, including MVP (Minimum Viable Product) development.

- **Acceleration:** For startups ready to scale, provide more intensive support for market entry, investor pitching, and scaling operations.

4.8. Monitoring, Evaluation, and Graduation

- **Regular Progress Reviews:** Conduct periodic reviews to track progress and identify areas where additional support may be required.

- **Performance Metrics:** Set key metrics like product development milestones, market traction, and financial viability to evaluate success.

- **Graduation Criteria:** Define criteria for graduation, such as revenue targets, product readiness, or funding achievements, and provide post-graduation support or alumni status for ongoing access to resources.

4.9. Forge Industry and Academic Partnerships

- Collaborate with industry leaders for internships, mentorships, and technical expertise.

- Involve academia in R&D support and student engagement, ensuring startups have access to cutting-edge research and skilled interns or employees.

4.10. Ensure Sustainable Operations

- **Revenue Streams:** Develop income streams, such as equity stakes in startups, fee-based services, and revenue-sharing models.

-Funding Sources: Secure ongoing funding through government programs, industry sponsorships, grants, and successful alumni ventures.

- **Community Engagement**: Engage with the local community through events, workshops, and demonstrations to promote the incubation center's impact.

A well-designed incubation center can significantly enhance an institute's entrepreneurial Eco-system, contributing to innovation, job creation, and long-term economic growth. Intellectual Property

In case of any innovation/invention, the institute will encourage the researcher to file a patent. The institute has collaboration with the third party agency, which will process the patent application. The institute shall bear all the expenditure in filing of patent application. If the patent is commercialized, then the revenue sharing would be as per IP Policy of the Institute.

5. Policy for Research Projects, Publications, Patents and Book chapters

The institute follows a unique incentive scheme to reward the faculty for the R&D project works carried out in the respective year. This scheme is introduced to impart research culture and to motivate faculty to identify new innovations. The incentive scheme is as per the table below.

S. No.	Category	Name	Percentage of Sharing
1	Funded Research Projects from Govt. organizations, R&D Organizations, Industry, University etc.	Principal Investigator	5% of the received fund only upon submission of completion project
		All Co-investigators	2% of the received fund shared only upon submission of completion of project
2	Patent Commercialization	Author(s)	50:50 (institution : author(s))

5.1 Incentives for Publishing Papers

As a part of the continual quality improvement policy, the institute encourages publication of papers in various conferences and journals by the staff members and can claim incentives. Staff members presenting their research papers in regional/national/international-seminars/conferences/ workshops will be provided by OD leave and reimbursed by the full registration fee. Faculty research publications in reputed national/ international journals/conferences will be reimbursed, awarded and rewarded as per the table given below.

5.2 Reimbursement

Category	Description	Reimbursement (INR)
A	Transactions of IEEE/ASME/ASCE/ ACM/SCI, Journals with SJR/SNIP > 0.5 and of similar standard	20000
B	Web of Science /ESCI/Scopus Indexed Journals with existence of more than 2 yrs, prior to the date of publication.	15000
C	Journals approved by UGC	5000
D	International/National Conference publication with ISBN Proceedings	Full Registration Fees

Note:

1. The publication charges should be paid in the name of Journal/Publisher and receipt to be generated in the name of Author, who is applying for Reimbursement.

2. All the reimbursements will be the original Fee paid, with a limitation of amount as mentioned in the table.

3. Neither Reimbursement, nor Reward will be given to paper published in list of discontinued Journals of non-indexed, Scopus/Cloned Journals list of UGC.

4. Papers published in list of Journals banned by UGC/Scopus/WoS are also not eligible for Reimbursement or Reward.

5. For papers publishing in journal through conference, the faculty can apply for reimbursement either in journal category (A/B/C) or in Conference category (D) and not in both.

6. The original registration fee will be reimbursed to the author publishing in Scopus Indexed & above journals through YSPM Conferences. However, no reward is permissible.

7. For attending International conference, full registration fee could be sanctioned, provided the presented work will be published in peer reviewed Conference Proceedings / journals/ book chapters.

8. Maximum registration fee payable for International Conference/Conferences will be INR 12000 per faculty member in an academic year.

9. The faculty members have to bear the expenses for travel and accommodation for outstation conferences.

10. Permission to attend Conference will be given based on exigencies of work and only once in a Semester.

5.3 Award

For papers published in category A and B Journals, wherein no registration fee/Reimbursement is claimed, the first existing author of YSPM out of **n** number of authors is entitled for **Award**.

The award categories are:

Category	Description	Award (INR)
1	Papers published direct to following Journal: - IEEE/ACM Transactions - Journals listed by Elsevier/Springer /Wiley/ Taylor & Francis/ Sage Publication, existing for last 3 Yrs - Journals by IET Publication, existing for last 3 Yrs **AND** - All Q1 and Q2 listed Journals	Total 8000 5000 to first author + 3000 distributed to co-authors
2	- Any Paper published in Journal directly in the listed category of Elsevior/Springer /Wiley/ Taylor & Francis/ Sage Publication, existing for last 3 Yrs. **AND** - All Q3 and Q4 listed Journals	Total 5000 2000 to first author + 3000 distributed to co-authors

5.4 Patents and Book Chapters

1. The fee for patent filling will be borne by institute; provided "Institute" is, the first applicant and Inventors (with institute address) belong to the institute.

2. For the Patents filed & published individually (wherein institute does not bear any filling charges) and applicant not being Institute, reward of Rs.3000/- will be given to the first Inventor, provided the inventor has institute's affiliation.

3. Authors of Books/Book Chapters indexed in Scopus or Published by International Publisher will be rewarded Rs. 1500/- for one or more Book Chapter and Rs. 5000/- for Complete book, provided the affiliation should be YSPM. This reward is only for Authors, not Editors.

4. Once the paper is published, before applying for reimbursement, the faculty has to submit soft copy of publication in the Department/Central Library.

5. All Papers (to Journals or Conferences) are to be submitted after proper plagiarism check and language check through proper channel, HOD/Dean (R&D)/Principal or Director. Affiliation of College name should be properly mentioned and even the institute to be acknowledged wherever possible.

6. In a scenario where the author has more than one affiliation, the author should compulsorily mention affiliation of respective institute of YSPM.

7. Reimbursement of charges will be after online publication and indexing of the paper or book chapter.

8. Every Faculty member must publish either one Web of Science or two Scopus or two UGC care publications in every academic year.

9. Every faculty member should present the work carried out by UG/ PG or PhD students at least once in every academic year either virtually or in person and also promote and

prepare the students to present in at least National level conferences.

5.5 Code of Ethics for Research

1. **Academic Honesty:** The institute holds high respect for honesty in all scientific communications in reporting data, results, methods, procedures, and publication status. The institute does not entertain fabrication, falsification, misrepresentation of data. Deceit of colleagues/funding-agencies or public is considered misconduct on the part of the researcher.

2. **Integrity:** The institute gives high regard for keep-up promises & agreements and sincerity & consistency of ideas and implementation.

3. **Carefulness:** One must carefully & critically examine one's own work, associates/team work and keep a record of research activities such as data collection, research design, and correspondence with agencies of journals.

4. **Respect for Intellectual Property:** Honor patents, copyrights, citations, and other forms of intellectual property. One must not use unpublished data, methods, or results without permission. Authors should give proper acknowledgements/citations and avoid plagiarism.

5. **Confidentiality:** The author should protect confidential communications such as documents, works, blue-prints, papers, publications, observations, trade secrets and patent records.

6. **Social Responsibility:** Mitigate social harm through research and public education/advocacy

7. **Competence:** Improve professional competence and expertise throughout life in education & learning and promote research competence in all aspects of research.

8. **Legality:** A researcher must know and obey government policies, relevant laws and institutional rules and regulations with regards to IPR issues.

9. **Protection of Human Subjects:** Minimize harms & risks to human subjects, use special precautions with vulnerable situations and respect human dignity/privacy/autonomy. Equitable distribution of benefits and burdens of R&D.

10. **Rules for Plagiarism:** All project/seminar reports, dissertations/thesis, research papers, case studies, and any such documents need to be checked with the standard plagiarism software tool which has been accepted by renowned Research organizations and Universities. In case of project/seminar reports, dissertations/thesis, the concerned student needs to submit a plagiarism report generated by a licensed software tool.

5.6 Withdrawal of membership from R&D project

Researchers can withdraw from the approved research in writing through proper channel and on the consent of sponsoring agency. Researchers should use the approved funds for that project only as per sanctioned heads of budget. Researchers should return the received money/money's worth to the institute if they didn't attend any professional development activities which are contributory to the R&D project.

Principal
Yashoda Technical Campus,
Faculty of Engineering

Director
Yashoda Technical Campus
Satara