



Research and Development Policy

October 2022

SDM College of Engineering and Technology

Dharwad



"Research is to see what everybody has seen, and think what nobody has thought"

Dr. Albert Szent-Gyorgyi



#### Preface

The renaissance of Higher Education Institutions (HEIs) structure to promoting quality research and make India self-reliant (Atma-Nirbhar Bharat) is the mandate of National Education Policy (NEP) 2020. Research and Innovation (R&I) are the two key aspects to enhance the quality of education and bring in vibrant research culture in HEIs. The congenial research environment is essential to increase the research output and encourage collaborative multidisciplinary/transdisciplinary research.

In tune with the country's mission to promote research, development & innovation, it is essential to follow certain guidelines from the Ministry of Education (MoE), UGC and AICTE. A dedicated research policy is required at Institute level to have common research framework meeting the quality metric requirements of National/International accreditation and ranking agencies (ABET / QS Ranking / THE Ranking / SHANGAI Ranking). The proposed guidelines shall serve as a beacon light to all and in specific the fledgling researchers.

We take this opportunity to thank all the contributors in preparing this policy and our heartfelt gratitude to the magnanimous management for providing all the support.

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#### Introduction

The National Education Policy (NEP) 2020 envisages the promotion of quality research within the Higher Education Institutions (HEIs). Research and Innovation (R&I) are prominent aspects to enhance quality education in HEIs. Societal concerns and challenges of our country can only be addressed with strong and vibrant higher education ecosystem with an emphasis on research, innovation, and technology development. The integration of research, innovation, and technology development is the basic building block of Atma-Nirbhar Bharat (Self-reliant India). It is essential to create a conducive environment for increased research productivity, to encourage collaborative research cutting across different streams (interdisciplinary/multidisciplinary/transdisciplinary & translational research culture mandated in NEP - 2020). Collaboration with industry, community-based organizations and agencies at local, national & international levels and facilitate the greater access to research through mobilization of resources and funding.

#### Vision

To put in place robust mechanism for developing and strengthening the research ecosystem at SDMCET aligned with the provisions of NEP-2020.

#### Mission

- i. To create a conducive and vibrant environment for increased research productivity.
- To encourage collaboration with government, agencies (local, national, and international levels) and promote interdisciplinary/multidisciplinary/transdisciplinary & translational research culture as mandated in NEP 2020.
- iii. To support and facilitate larger access to research through mobilization of resources and funding.
- iv. To ensure quality research on societal concerned issues for sustainability.

#### **Objectives**

- To create a role based organizational structure, formulate the research policy, identify thrust areas of research, and form a consortium of researchers.
- ii. To develop a constructive and flexible research policy supporting the recruitment of research personnel, purchase of equipment, adequate financial autonomy to the Principal Investigator(s) and disseminate the research findings to all concerned.
- iii. To establish a vigorous system to promote vibrant researchers, innovators, and potential collaborators for synergetic research partnerships





- iv. To act as a liaison between researchers & research funding agencies, extend guidance and support to prepare & submit research proposals, post-sanctioning of the grants and periodically oversee the status of the project.
- v. To coordinate with other centres' dealing with University-Industry Inter Linkage (UIIL), Incubation, Innovation and Entrepreneurship Development (IED) and Intellectual Property Rights (IPR).
- vi. To develop an Institutional Research Information System for sharing the information of research publications, projects, consultancy, in-house human capital for industrial consultancy and services.
- vii. To engage in research capacity building and utilize the services of superannuated active faculty/scientists in research to replenish the void created.
- viii. To serve as nodal center for conceptualization of research ideas by organizing domain specific workshops/training programs and ensuring the integrating and best ethical practices.

#### Governance

To foster to the needs of multidisciplinary and transdisciplinary research in line with the NEP 2020, an efficient governance mechanism ensuring functional autonomy, transparency, accountability, adaptability to create a conducive research environment is a key to progress. The dedicated leadership and administrative structure for research led by experienced researchers are essential for establishing an effective and robust Research Governance (RG) in R & D Cell at the Institution. RG will have Research Advisory Council (RAC) headed by the Principal or his nominee. The organizational structure of RDC comprises of various committees for specified functions is as shown in Fig.1.:

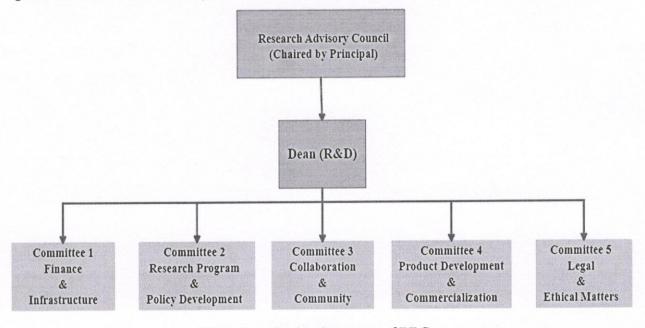


Fig.1. Organizational structure of RDC.

In view of preparation for the accreditation and ranking agencies, following initiatives are proposed by the Institution to support the faculty members in terms of research activities which include:

# 1. Institutional Grants (Seed Money)



The objective of the seed money is to promote research and innovation culture amongst young faculty members. Seed funding shall be used to start or continue the existing research work by the faculty member. The aim of the seed funding is to catalyze the process of research and ensure that the competency built helps in attracting the agencies granting research funds. The applicant shall clearly demonstrate that the proposed project brings in new dimensions to his/her research and likely to generate the external funds. The projects which are already supported by other funding agencies will not be considered.

## The preference shall be given to the proposals that

- i. Strengthen the inter-disciplinary, multi-disciplinary and transdisciplinary research partnerships.
- ii. Shall possess scientific merit and has potential for external funding.

Eligibility

i. Applicant shall be full-time faculty and completed at least two years (one year for candidates with PhD degree) of service at SDMCET Dharwad can apply under this scheme in the respective format (ANNEXURE I).

#### **Terms and Conditions**

- i. In case of resignation without completion of ongoing project, PI must refund all the money availed under this scheme (if there is no Co-PI).
- ii. In case of Maternity Leave and sanctioned/approved leave, the PI will be given permission to extend the project after joining duty.
- iii. After completion of project, PI must submit a comprehensive report along with achievements, present the details before the committee and its mandatory to submit the report on utilization of the fund as per the requirement.
- iv. The duration of the scheme shall be for two years only (maximum) and not extendable.
- v. The submitted proposals shall be evaluated as per the format (ANNEXURE II)

### **Upon Completion of Project**

- i. PI must submit a proposal for external funding within the time period of the project under this scheme.
- ii. PI must submit copies of project completion report (ANNEXURE III) along with final Utilization Certificate (ANNEXURE IV).

## **Project Evaluation**

The date of proposal evaluation meeting shall be notified by the office of the Dean (R&D) in consultation with the Principal.

## Budget

The funding support under this scheme shall be up to Rs. 2,00,000/- (for 2 years).



PRINCIPAL
SDM College of Engg. & Tech.,
Dhavalagiri, Dharwad-580002

## A) Funding for purchasing and other activities as specified below:

- i. Minor equipment/software/ related with proposal (which are not available in SDMCET).
- ii. Consumables (ICs, circuit boards, chemicals, data, testing charges, tools, etc.)
- iii. Contingencies (books, annual membership fees in technical societies etc.)
- iv. Any other important items subject to the prior approval from Dean (R&D).

#### B) Grant cannot be used:

i. For purchase of Laptop /Desktop.

#### **Grant Administration**

- PI is responsible for the administration of granted funds and he/she must be ascertaining that overexpenditures do not occur.
- ii. If the work requires more time over initial proposed period to complete, the PI may be permitted three-month extension (once only) on sending a request to the Dean (R&D) at least one month prior to the end of the project.

## 2. Patent filing, publishing, and grant

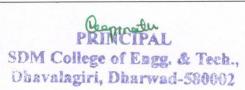
Innovation, entrepreneurship and start up are key parameters in all the ranking and accreditation agencies. The number patents filed, published, and granted shall have due weightage in external funding and other accreditation agencies. Hence, the Institution supports financially and motivate faculty members to participate in intellectual property right (IPR) activities.

The patent shall be filed in the name of SDM College of Engineering and Technology, Dharwad and *Head of the Institution shall be one among the Innovators as this shall fetch points for the Institution*. The funds required to file the patent shall be taken care by the Institution. The funding for the Indian patents shall be up to **Rs.5000/-** for **Filing and Publishing** and **total fees** if the Patent is **granted (up to Rs. 50,000/-).** Funding for the International patents shall be on prior approval from the Institution authorities and Management.

#### 3. Research Publications and Outreach

i. The faculty members must publish ONLY in SCOPUS / Web of Science (WoS) / UGC Care List I & II indexed Journals, Conferences, Book Chapters and Books. The articles published in SCOPUS database especially Q1 will have substantial weightage in all the accreditation/ranking agencies and





- external funding agencies. The collaborative research (National/International) addressing the SDGs shall draw the attention of international funding agencies such as BRICS, DAAD etc.
- ii. All the faculty members should publish at least TWO research papers (SCOPUS / WoS / UGC Care List I & II indexed) in an academic year to meet the requirements of publications per faculty per year by the respective accreditation agencies.
- iii. The faculty members shall work towards addressing the inter-disciplinary, multi-disciplinary and transdisciplinary research problems.
- iv. Engage UG/PG students to publish in minimum Scopus indexed Journal/Conference and file/publish patents.
- v. The senior faculty members are expected to have editorial experience such as Editor / Guest Editor / Lead Editor and invite the research submissions in Journal Special Issues/Edited Books (SCOPUS / Web of Science / UGC Care List I & II indexed).
- vi. Professional society membership (IEEE/ACM/ASME/SESI etc.) is mandatory for all departments.
- vii. The Scopus h-index of at least 5 is desirable for all senior positions (Associate Professor level and above).
- viii. PhD guided per faculty per year has substantial weightage in ranking and accreditation agencies.

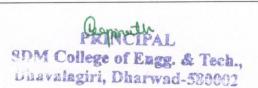
## 4. Research Incentives and Recognition:

Financial support (merit incentives) shall be given to the faculty members to motivate and encourage them to publish in the quality journals (*specifically Q1 rated*) which in turn fetches substantial weightage under research criteria from all the ranking and accreditation agencies. The financial support for various distinguished merit activities in the field of academics and research are as follows:

#### i. Journal Publications

Sl. No.	Field of activity	Amount in Rs.
1	Q1 article with 5-year average TR Impact Factor > 5 indexed in WoS Journal Master List	15000.00
2	Q1 article with 5-year average TR Impact Factor < 5 indexed in WoS Journal Master List	12000.00
3	Q2 article indexed in WoS Journal Master List	8000.00
4	Q3 article	3000.00
5	Q4 article	2000.00





#### ii. Conferences

The faculty members are encouraged to present papers in peer reviewed International Conferences indexed in SCOPUS/WoS/DBLP. Attending the truly flagship IEEE/ACM/ASME/Springer/Elsevier etc. sponsored conferences help in building research network across the globe leading towards the professional network. Institution shall lend financial support as follows:

Sl. No.	Type of Conference	Nature of support	Frequency
1	For presenting papers in flagship International Conferences indexed in SCOPUS within India	Actual TA, DA and Registration fee	Max. of TWO in an academic year
2	For presenting papers in flagship International Conferences indexed in SCOPUS outside India	50% of the amount on actual TA, DA and Registration fee**	Once in TWO Years.

<sup>\*\*</sup>NOTE: For presenting outside India presenter can spend maximum of \$200 per day and maximum 50% of this amount can be reimbursed or 50% actual which ever is less.

### iii. Editor of a Book/Chapters in a Book/ Patents published

1	For each Full Book/Monogram published with reputed publisher such as IEEE, Elsevier, Springer, T&F, Berkeley Press, Tata McGraw Hill, Wiley etc. (SCOPUS indexing desirable)	20000.00
2	For Book chapter published (SCOPUS indexed desirable)	3000.00
3	For each Patent Granted	20000.00
4	For organizing each International Conference/ Workshop/ Seminar / (Organizing coordinator and team) indexed in SCOPUS	10000.00
5	For organizing each National Conference/ Workshop/ Seminar / Refresher course /STTP (Organizing coordinator and team) indexed in SCOPUS	6000.00

## iv. Incentives for Research Projects (external funding agencies)

The incentives to the faculty members working on the research projects from DST, SERB, AICTE, UGC, VTU or from any other research organizations is proposed. The breakup of the merit incentive is as follows:

Principal Investigator (PI)	10% of the Sanctioned fund
Department supporting staff (faculty, Laboratory instructors, attenders, etc)	1 % of the sanctioned fund.
Supporting office staff, Principal and Dean (R&D)	0.5% of the sanctioned fund.

#### Note:

PI receives his share of merit incentive as and when the sanctioned amount is received by the Institute from
the funding agencies with the undertaking that the research work shall be completed in a stipulated period.
The supporting staff shall receive their share annually depending upon the progress of the project as per the
directions of the PI.





- ii. A committee constituted by the Principal *reviews* the quality of the merit and recommends for the incentives in the respective areas.
- iii. All the policies of merit incentives will be reviewed after every TWO YEARS.

# 5. Organizing conferences, symposiums, colloquiums, hackathons, and workshops

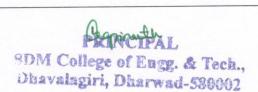
It is mandatory requirement to organize the conferences, workshops specifically on Research Methodology, IPR and skill development. Detailed reports and documents with Geo Tagged photos needs to be furnished and upload online. The conferences sponsored by IEEE/ACM/Springer/ASME/SESI etc. shall be organized as per the requirement of the accreditation and ranking agencies. Conferences must be indexed in SCOPUS only. The following points shall be considered for hosting the National/International events:

- i. At least two flagship Conferences (all departments to participate under the common theme) at *Institute level* shall be organized in an academic year. ONE shall be truly international conference in nature by associating with some Foreign Universities ranked in QS World Ranking (within 500) such as to build the professional network.
- ii. The standard submission portal shall be considered for organizing the International Conferences such as to attract submissions from abroad. The organizers shall plan at least one year in advance to host the Conference and give wide publicity to the same.
- iii. At least *TWO National level workshops* to be organized by all the respective departments in an academic year and faculty members can apply for external funding agencies to conduct such events. At least 5-day or one-week workshops must be organized to avail the points in the accreditation and ranking agencies. Geo tagged photos shall be taken and preserved.
- iv. The keynote speakers and resource persons participating in workshops must have SCOPUS h-index of at least 5.
- v. An expert talk by known academician / industrialist / social scientist /environmentalist shall be organized monthly which helps in building the brand of the Institution.
- vi. Software/hardware hackathons shall be organized once in a year in association with the other organizations.

# 6. Promote interdisciplinary, multidisciplinary, and transdisciplinary research activities in the institution

Promoting collaborative research culture, MoUs with the National/International Universities & industries, building competent labs to apply for National/International funding agencies is very crucial. The collaborative research will fetch substantial points in the ranking and accreditation agencies. Faculty members can avail financial support for multi/transdisciplinary research areas.





Sl. No.	University/Industry Visit	Nature of support	Frequency
1	To visit <i>Indian Institutions</i> ranked in NIRF 100 and Institutes of National repute	Actual TA, DA and Registration fee	Max. of ONE in an academic year
2	To visit <i>Foreign</i> Universities ranked in QS World Ranking 500	50% of the amount on actual TA, DA and Registration fee**	Once in TWO Years.

<sup>\*\*</sup>NOTE: A visitor can spend maximum of \$200 per day and maximum 50% against actuals can be reimbursed.

# 7. Professional society membership support (IEEE/ACM etc.)

The faculty and students' involvement in the National/International Professional Society membership (IEEE/ACM/IEI/SESI etc..) is an important entity which yields points and recognition in the ranking and accreditation agencies. The following points shall be considered:

- i. The respective departments must associate with at least ONE Professional Society membership.
- ii. The awards or recognitions from such professional bodies shall have due weightage in NAAC/NBA.
- iii. The faculty members shall apply for level elevation based on their experience and scientific contribution (Senior Member IEEE/ Fellow IEI/ Fellow IET/ Fellow Royal Society of Chemistry etc..). The significant points are ear marked for such achievements.

# 8. At least FIVE expert talks from eminent personality with minimum research credentials (minimum Scopus h-index:5)

This activity will help in building the Institution's reputation and recognition in India and abroad. It also improves the peer perception / visibility of the Institution.

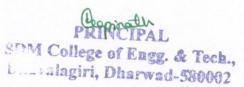
# 9. Research Highlights

Ear marked notice boards highlighting research accomplishment (Q1 Journals / research grants sanctioned / best paper awards/ participation of faculty or students in truly flagship events / faculty members being part of state level or national level committees) at Central and department level. This is one among the mandatory requirement of the NAAC. The digital/social media platforms mut be used for promoting research.

# 10. Key Performance Indicators (KPI)

Based on the teacher's self-assessment, KPI scores are proposed for research and academic contributions. The minimum KPI score required by teachers from this category is different for different levels of promotion. PhD shall be mandatory for all the positions and full time PhD from the institutions (Top 100 ranked in NIRF) for entry level shall be considered. The scores (category III of UGC guidelines) shall be for:



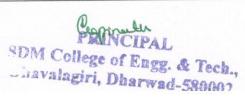


- i. Associate Professor 150 points
- ii. Professor 300 points (2 PhD guidance completed)

Category III A, III C and III D are all non – exhaustible (the points can be always claimed in the service). In case of the exhaustible components the points can be claimed only once for the respective promotion and subsequent points are to be earned for next promotion.

SI. No.	KPIs	Engineering / Sciences	Max. points for Engineering College Teacher Position
		Refereed Journals *	Maximum 25 / publication based on the TR Impact Factor
III A	Research Papers published in: ARTICLES only (Non-exhaustible)	Non-refereed but recognized and reputable journals and periodicals, having ISBN/ISSN numbers.	5 / publication
		Conference proceedings as full papers, etc. (Abstracts not to be included)	10 / publication
		Text or Reference Books Published by International Publishers with an established peer review system	50 /sole author; 10 /chapter in an edited book
III B	Research Publications (books, chapters in books	Subjects Books by National level publishers/State and Central Govt. Publications with ISBN / ISSN numbers.	25 /sole author, and 5/ chapter in edited books
M 2	& monographs)	Subject Books by Other local publishers with ISBN / ISSN numbers.	15 / sole author, and 3 / chapter in edited books
		Chapters contributed to edited knowledge-based volumes published by International Publishers	10 /Chapter
		Chapters in knowledge-based volumes by Indian/National level publishers with ISBN/ISSN numbers and with numbers of national and international directories	5 / Chapter
III C	RESEARCH PROJECTS		
III (C) (i)		(a) Major Projects amount mobilized with grants above 30.0 lakhs	20 /each Project
	Sponsored Projects carried out/ ongoing (Non-exhaustible)	(b) Major Projects amount mobilized with grants above 5.0 lakhs up to 30.00 lakhs	15 /each Project





		(c) Minor Projects (Amount mobilized with grants above Rs. 50,000 up to Rs. 5 lakh)	10/each Project
III (C) (ii)	Consultancy Projects carried out / ongoing (Non-exhaustible)	Amount mobilized with minimum of Rs.10.00 lakh	10 per every Rs.10 Lakhs and Rs.2 Lakhs respectively
III (C) (iii)	Completed projects: Quality Evaluation	Completed project Report (Acceptance from funding agency)	20 /each major project and 10 / each minor project
III (C) (iv)	Projects Outcome / Outputs (Non-exhaustible)	Patent/Technology transfer/ Product/Process	30 / each national level output or patent /50 /each for International level
III (D)		RESEARCH GUIDANCE	
III (D) (i)	M.Phil/MSc Engg./MTech/ME	Degree Awarded	3 /each candidate
III (D) (ii)	Ph.D	Degree Awarded	10 /each candidate
	(Non-exhaustible)	Thesis submitted	7 /each candidate
III (E)	TRAINING COURSES A	ND CONFERENCE /SEMINAR/WOR	KSHOP PAPERS
	Refresher courses, Methodology	(a) Not less than two weeks duration	20/each
III (E) (i)	workshops, Training, Teaching-Learning- Evaluation Technology Programmes, Soft Skills development Programmes, Faculty Development Programmes (Max: 30 points)	(b) One week duration	10/each
	Papers in Conferences/	Participation and Presentation of research papers (oral/poster) in	
III (E) (ii)	Seminars/workshops	a) International conference	10 each
	etc.**	b) National	7.5 / each
		c) Regional/State level	5 /each
		d) Local –University/College level	3 / each
	Invited lectures or	(a) International	10 /each
III (E) (iii)	presentations for conferences/ symposia	(b) National level	5 /each
III (F)	Development of e-learning	delivery process/material	10/each

<sup>\*</sup>Wherever relevant to any specific discipline, the KPI score for paper in refereed journal would be augmented as follows:

- (i) indexed journals by 5 points (ESCI Journals)
- (ii) papers with impact factor between 1 and 2 by 10 points (Thomson Reuters (TR) Impact Factor only)
- (iii) papers with impact factor between 2 and 5 by 15 points (Thomson Reuters (TR) Impact Factor only)





(iv) papers with impact factor between 5 and 10 by 25 points (Thomson Reuters (TR) Impact Factor only)

\*\* If a paper presented in Conference/Seminar is published in the form of Proceedings, the points would accrue for the publication (III (a)) and not under presentation (III (e)(ii)).

#### NOTE:

The KPI for joint publications will have to be calculated in the following manner:

i. Of the total score for the relevant category of publication by the concerned teacher, the First/Principal author and the corresponding author/supervisor/mentor would share equally 60% of the total points and the remaining 40% would be shared equally by all other authors.

## 11. Research Monitoring

The research review committee (RRC) shall be formed to monitor and oversee research progress, coordinate research program, manage and facilitate optimizing resources, timely review of research activities for completion of the projects as per the schedule. RRC must visit respective departments once in a month and apprise the developments to the Principal. RRC members (Sl. No. 3,4&5) must have minimum SCOPUS h-index of 5. The composition of RRC shall be as follows:

Sl. No.	Research Review Committee	Designation
1	Principal	Chairman
2	Dean R&D	Convenor
3	One Professor	Member
4	Two Associate Professors	Member
5	One Assistant Professors	Member

# 12. Research Information Management System (RIMS)

The technical institution plays a key role in the advancement of research and innovation as two distinct entities through RIMS for the benefit of faculty, students, industry, and other stake holders. The institution shall put place RIMS to collect and manage research-oriented information databases, publications, projects, fellowships, collaborations, patents, thrust areas aligned with the research policy of the institution. RIMS shall provide a platform for accessing resource centric information pertaining to human capital (expertise), physical capital (lab





facility and sophisticated instrumentation facility) and knowledge capital (Digital library & information), intellectual property facilitation, quantitative methods, and data analysis. The institution shall create a blog or portal for Institutional Research Information and Institutional Repository and sign an MoU with UGC-INFLIBNET to access and upload the research information through Shodh Ganga, Shodh Gangotri, Shodh Sindhu, Shodh Shuddi and Shodh Chakra.

# 13. Research Review (Research Scholars)

As per the Regulations of VTU 20Ph.D.6.3 Research Advisory Committee (RAC) of Research Scholars in the respective research centers at SDMCET must comprise of following members:

Sl. No.	Research Advisory Committee details	Designation
1	Principal	Chairman
2	Head of the Department	Member
3	Domain Expert I	Member
4	Domain Expert II	Member
5	Supervisor	Member Convener
6	Co-supervisor (if applicable)	Joint Member

Concurrence to the VTU Regulations, RAC of respective Research Scholar shall meet at least once in every six months to monitor and evaluate the progress of the Scholar. Institution shall consider the following procedures to effectively monitor the progress of each Research Scholar of the Institute.

- Two half yearly progress reviews shall be arranged (January and July) for each research scholar through the respective RAC in a calendar year until the submission of the Thesis.
- ii. Research coordinators of the respective research centers shall organize the half yearly progress reviews and submit the half yearly progress reports to VTU and Dean(R&D), SDMCET.
- iii. If a Research scholar misses half-yearly progress review, then he must submit a absent-report duly authenticated by the Research supervisor to the respective Research coordinators and Dean(R&D), SDMCET. However, a Research scholar should not miss two consecutive half-yearly progress reviews.

To put in place proper mechanism and catalyze the research, regular half yearly Research Reviews shall be supported by the Institution. The support shall be as follows:

- i. Honorarium to External expert: Rs. 2500/- per research scholar
- ii. TA as per actuals
- iii. Institute to take care of local hospitality.





## 14. Road Map for SDMCET

Institution shall aim at obtaining the *Research Autonomy status* from VTU by the virtue of being in Top 100 NIRF ranking for three consecutive years. With progressive mindset Institution shall also participate in QS Ranking (*India / BRICS / Asia / World*), Times Higher Education Ranking (THE) and *SHANGAI Ranking*. Participating in International ranking agencies will give mileage to the Institution which help in reaching to the international student and research community. Institution shall take gigantic step to participate in international ranking agencies in the years to come. Institution shall foster the human elements (faculty, staff, scholars, and students), logistics (land, buildings, and facilities), knowledge resources (research equipment, project utilities, and consumables), fund flow, etc. through a steady, proficient, effective governance (Rules, Norms, and Policies) and financial (Grants and Funds) management.

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