Research Policy

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FOREWORD

Reputation of any educational institution depends on scholarship, research productivity and innovation. The success of a higher learning institute in attaining its objectives is greatly contingent upon the alignment of the faculty with all the aspects of research initiatives, being undertaken at the Institute.

College of engineering roorkee is committed to be a Research and Innovation Driven institute. The aim of COER is to see India become a global knowledge superpower through education, research and innovation. To attain this goal, it is absolutely important to pursue cutting-edge basic, targeted, and applied research in all domains/ faculty of studies in a transparent, responsible and ethical manner for advancement of knowledge and development of novel processes, technologies and products. It is equally important to ensure that the products and outcomes of such research are appropriately disseminated to reach the widest possible audience at both national and global levels. This policy provides a set of guidelines for conduct of research at all levels and is applicable to all employees and students of the college who may be involved in any form of research activity. The present research policy aims to help faculty and students to achieve excellence and contribute to organizations and society.

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1. Objectives

Research and Development (R&D) activities are the backbone of academic life of any Institute of higher learning. The initiatives of College of Engineering Roorkee are always in line with this objective. The basic aim has been to pursue knowledge through various programs for developing highly skilled technical manpower. The College of Engineering Roorkee has research programs aimed at advancing knowledge, improve our world, and shape the future.

Multi-disciplinary research is key to research vision and strategy to address the diverse, complex and demanding problems of today's society. Research activities are conducted collaboratively in the identified Research Groups. The research activities at COER are sponsored by Government research funding as well as industries and help in strengthening the Undergraduate and Postgraduate Research Programs. International collaboration in research is also pursued. The College of Engineering Roorkee is focusing on following objectives:

i. To create a favorable research environment.
ii. To provide support and facilities to students and faculty members for the enhancement of their research potential.
iii. To encourage the faculty members and students for publishing the papers in national/ international journals and conferences to achieve a target of one or more as peer reviewed journal papers published per year per faculty.
iv. To encourage the students and faculty members for filing the patents.
v. To encourage the faculty members to write the proposals for government and private sector research grants.
vi. To organize research based events such as conferences, workshops and expert lectures based on recent technological development.
vii. To enhance the knowledge and exposure of students and faculty members by collaborating with top international universities/ organizations.
viii. To publish e-Research Newsletter once in six months showcasing the research achievements of the institute.
ix. To create a network for research internship of students in collaboration with partner institutions in Indian and abroad.
x. To create a platform for industries through R&D assistance on industrial problems.
xi. To reward the researchers for their achievements.

2. Research Cell

The research activities are coordinated by the Dean Research with assistance from faculty representatives of all departments. For this purpose a research cell is formed with one faculty representatives from each department for tenure of two years. The Dean Research presents the progress of research activities once in a semester to the institute management.

3. Quality policy and Practices of the Research Cell

A. Roles and Responsibilities

   i.   Department coordinators are responsible for coordinating the research activities of their departments like Final Year Projects, Consultancy projects, research based projects etc.
   ii. Coordinators are required to maintain the proper documentation of all the activities related to their respective departments
   iii. Core committee is the review committee, responsible for reviewing the progress of research of each department periodically.

B. B.Tech and M.Tech Final Year Projects (FYP) Guidelines and rules for FYP

   i.   All activities related to final year projects will come under Research Cell.
   ii.   Efforts shall be made to give research orientation to the assigned B.Tech/ M.Tech projects problems to encourage students to publish their research in peer reviewed journals.
   iii. There shall be a departmental project coordinator who will be responsible for all FYP activities within the department.
   iv.   FYP shall be allotted to students at the end of the pre-final year. However, if students are in agreement with their respective supervisor wish to continue their PBL as FYP, they may continue with the prior intimation to the departmental project coordinator
   v.   Each FYP group shall have 2-4 students.
   vi.   FYP shall be allotted to students based on mutual concurrence between supervisor and students but the same shall be based on emerging technologies.
   vii. FYP may contain interdisciplinary components and for this the group may be allotted a co-supervisor from different department.
   viii. Each semester end one progress presentation will be done of each FYP.
   ix.   Performa of each meeting will be maintained.
   x.   The projects should be decided based on application for emerging technologies.
   xi.   Each project should have atleast one paper (review/ application based/ research based) in a conference/ Scopus Journal.
   xii. Synopsis, project report and other documents shall follow prescribed format.
   xiii. Deserving projects will get partial financial support from Research Cell.
   xiv. Any modification at department level should be informed to the department Research coordinator.
   xv.   Deserving FYPs will be enrolled for patent and a part of patent fee will be reimbursed by the College.
   xvi. Students will be provided with financial support to present their research work in national/ international conferences.
   xvii. The hard bound copy along with e-copy of FYP shall be archived in departmental library.
   xviii. The guidelines of FYP may be subject to modification in future.

4. Faculty Upgradation

For the academic and research upgradation, faculty members are encouraged to do the following assignments in each academic year:

PhD Faculty members:
- Publication of one Scopus and one SCI paper for Science and technology faculty members and one Scopus and one UGC Care Group-1 for Humanities faculty members.
- Submission of one sponsored research project to funding agencies.
- Participation in two ATAL FDPs.

Non PhD faculty members:
- Publication of two Scopus papers for Science and Technology faculty members and one Scopus and one UGC Care Group-1 for Humanities faculty members.
- Submission of one sponsored research project to funding agencies (optional)
- Participation in two ATAL FDPs.
- Faculty members, not registered for PhD must initiate the formal registration.

5. Project Based Learning

Project-based learning (PBL) is a student centric pedagogy that involves a dynamic classroom approach which is aimed at students acquiring a deeper knowledge through active exploration of real-world challenges and problems. It is a style of active learning and inquiry-based learning. The methodology is also recognized by AICTE under best practices.

From the year (2020-21) onwards the College of Engineering Roorkee will lay special emphasis on PBL for students of each year (excluding final year) of B.Tech, M.Tech, BBA, BCA, MBA, MCA, BSc Agriculture. In view of this, the Heads of Departments are requested to assign innovative projects to students, one project to a group of 2-4 students to be completed in one academic year. The projects should be aimed at exciting the students of emerging issues related to their field of study. The students should find an element of research in the project for which a solution is to be found through relevant search and discussion with the supervisor. The projects may require doing experimental investigations or computer simulation or a systematic literature survey or any other approach. A list of guidelines to be followed for successful implementation of PBL is mentioned below:

A. Guidelines: Projects Based Learning (PBL)

- All the students (excluding final year students) will be enrolled in Project Based Learning (PBL)
- Under PBL, projects will be assigned in the areas identified for the respective semester/ year
- Each PBL group will have 2-4 students

- There should be a departmental PBL coordinator for each year to take care of all PBL activities within the department of that particular year
- PBL coordinator will review the progress with supervisors and communicate the outcome to Departmental Research coordinator once in two months
- Each supervisor will meet his/her project group students regularly
- The students should be encouraged to present their projects in an annual exhibition organized in the department. Incentives for good performers can be recommended by the HOD
- Students should be encouraged to write at least one paper (review/ application based/ research based) for a Conference/ Scopus Journal. The project report in soft bound shall be archived in department library.
- The performance of students be monitored by respective supervisors and a record of the same will be maintained
- The guidelines of PBL may subject to further modification in future.

6. Code of Ethics and Plagiarism

Ethics and plagiarism are the significant components in the research and publication. Sometimes it is observed that researchers claim others work as their own, which will degrade the reputation of the institution.
- A research committee has been formed comprising of PhD holders of the institute to assess the faculty researcher / PG student who produce their work in the form of Research Publication / Research Proposal / Thesis Work (PG)/ Project Report.
- Especially the research work of the faculty / PG student in the form of journal paper / projects must go through the process of plagiarism and has to maintain high academic and production standards.
- Apart from this, the committee takes extra measures to ensure that the work is in accordance with the national/international standards.
- The Project Guides and Scholars are asked to use the software for which access is provided by the UTU, Dehradun for detecting the plagiarism. All faculty/student researchers seeking for journal paper submission are requested to submit the plagiarism report (maximum allowed limit 10%) to the committee for review. All UG/PG students have to submit plagiarism report (Maximum allowed limit 10%).
- Any violation of the rule and other issue, complaints regarding plagiarism attracts disciplinary action to be imposed by committee. Such scholars shall be asked to submit a revised document within a stipulated time not exceeding 3 months or as decided by the committee.
- Research cell will provide support for Turnitin plagiarism check through online support of UTU.

Plagiarism Checker Software:
https://www.turnitin.com/login_page.asp?err=3400&lang=en_us

7. Paper Publication and Research Recognition Awards

i.   PhD faculty members of Science and Technology need to publish one paper in SCI and one paper in Scopus Journal in an academic year. The list of journals can be checked on https://ugccare.unipune.ac.in/Apps1/User/WebA/CAREList

ii. Non PhD faculty members of Science and Technology need to publish two papers in Scopus Journal in an academic year. The list of journals can be checked on https://ugccare.unipune.ac.in/Apps1/User/WebA/CAREList

iii. Humanities faculty members need to publish one paper in Scopus and one paper in UGC Care Group 1 in an academic year. The list of journals can be checked on https://ugccare.unipune.ac.in/Apps1/User/WebA/CAREList

iv. Faculty members for research paper/ book/ book chapter/ patents publication with COER as the whole and sole affiliating institute will be awarded with incentives as mentioned below. However, in case of multi affiliations along with COER, incentive amount will be half.

Research Awards

S.No.	Category	Amount of Incentives (Rs)	
		First/ Corresponding author	Other author
1	Paper in SCI journal (impact factor more than 2)	Rs 10000/-	Rs 5000/-
2	Paper in SCI journal (impact factor more than 1)	Rs 8000/-	Rs 4000/-
3	Paper in Scopus journal	Rs 5000/-	Rs 2500/-
4	Paper in UGC Care Group-1	Rs 2500/-	Rs 1250/-
5	Books/ edited books with ISBN	Rs 10000/-	Rs 5000/-
6	Book chapter in ISBN Book	Rs 5000/-	Rs 2500/-
7	Patents Granted	Rs 10,000/-	Rs 5000/-

v.   The guidelines may be subject to modification in future.

8. Sponsored Research and Industrial Consultancy

A. Budget Heads

There will be a separate Institute account for project funds. All funds received for projects will be deposited in this account. Besides the funds for ongoing projects, this account will be used to maintain a number of funds of the Institute as described below:

Institute Development Fund (IDF): Overheads from projects and portions of payments made to consultants etc. will be credited to this fund as per details given below. The utilization of this fund will be decided by the Dean Research and Director General COER.

Professional Development Fund (PDF): PDF is a budget head of R&D funds of individual project investigators/ consultants/ staff which is created out of the following sources for professional expenses/ development of the concerned investigators/ consultants:

a) Part of the overhead of sponsored research projects.
b) Amount transferred from short-term courses that are not drawn as honorarium.
c) Full or certain portion of the consultancy fee from consultancy projects
d) Any other income with the approval by the Director General

The account thus generated can be utilized by the investigators in the expenses towards professional development as given below though no honorarium is admissible from this PDF:

i. Travel (within the country or abroad) for professional work
ii. Purchase of books, journals, membership fees of professional societies.
iii. Conference (within country or abroad) related expenses.
iv. Purchase of consumables for professional work.
v. Purchase of equipment
vi. Other expenditures such as-cost of photocopying, binding, cost of telephone calls, hiring of manpower, hiring of services such as taxis, caterers etc. needed for professional work.
vii. Any other special expenses permitted by the competent authority.

Intellectual Property Rights Facilitating Fund (IPRFF): The IPRFF fund is created out of the share(5% institute overhead) and further augmented out of the earnings due to commercial exploitation of the patents and IPRs. This Fund shall be utilised by the institute for updating the innovation, for filing new patent applications, protecting their rights against infringements, for creating awareness and building competency on IPR and related issues.

B. Costs

Cost of a research project will consist of equipment costs, institute overheads, actual expenses, and payment to research scholars/staff/employees for consultancy projects, service tax on consultancy fees.

C. Institute Overhead Charges

For sponsored Research Projects, the Institute will forward proposals with overheads 20% of the total project amount to the funding agency. However, the actual overhead will be determined on what the funding agency agrees to, in consultation with the Dean Research/ Director General.

For Consultancy Projects, thirty percent (30%) of the total project cost will be charged to the funding agency as Institute overhead normally.

For testing services, the institute overhead will be the estimated as per the cost of testing service charges and will be deposited in Institute Development Fund (IDF).

Rate of overhead (after deduction of Service Tax)

Institute Overhead Charges	Sponsored Research Projects	Consultancy Projects	Testing Service
COER	20%	25%	25%

The institute overhead charges will have following components:

a) 65% of the amount to the Institute Development fund(IDF)
b) 30% to the Professional Development Fund (PDF) of the PI (in case there are Co-PI, this amount will be distributed proportionately to the PDFs of the investigators involved.)
c) 5% to the Intellectual Property Rights Facilitating Fund (IPRFF).

9. Concluding Remarks

The Research Policy outlined above is expected to serve as a reference for all concerned. For executive action, appropriate notification should be issued as and when required. Further, the policy should be reviewed once in two years to make it relevant to the needs of prevailing practices.