



College of engineering and Management, Kolaghat (CEMK)

Guidelines for Establishment of Research & Development Cell (RDC)

1. Preamble

In alignment with the National Education Policy (NEP) 2020 and the University Grants Commission (UGC) Guidelines for Establishment of Research & Development Cell (RDC) in Higher Education Institutions, CEMK recognizes research, innovation, technology development, and knowledge creation as integral components of quality higher education. The establishment of a Research & Development Cell (RDC) aims to foster a vibrant research ecosystem, promote interdisciplinary and translational research, strengthen industry-academia collaboration, and contribute to national priorities and societal development.

2. Vision

To establish a robust, dynamic, and sustainable research ecosystem at CEMK that promotes innovation, knowledge creation, technology development, entrepreneurship, and societal impact through quality research and collaborative engagement.

3. Mission

The RDC at CEMK will:

- Create a conducive environment for high-quality research and innovation.
- Promote interdisciplinary and multidisciplinary research.
- Facilitate collaboration with industries, government agencies, research institutions, and international organizations.
- Mobilize resources and research funding.
- Strengthen research infrastructure and capacity building.
- Promote ethical research practices and academic integrity.
- Support technology transfer, intellectual property generation, and entrepreneurship.

4. Objectives

The RDC will pursue the following objectives:

1. Develop and implement a comprehensive Research Policy for CEMK.
2. Identify thrust areas of research aligned with institutional strengths and societal needs.
3. Facilitate research project formulation, submission, execution, and monitoring.
4. Promote faculty and student participation in funded research projects.
5. Establish linkages with industries, R&D organizations, universities, and government agencies.
6. Facilitate consultancy, innovation, incubation, patenting, and technology transfer.
7. Develop institutional databases related to research activities.

8. Promote publication in high-quality indexed journals and conferences.
9. Ensure compliance with research ethics and integrity standards.
10. Support capacity building through workshops, seminars, FDPs, and research training programmes.

5. Establishment of RDC

The Research & Development Cell will function as the apex institutional body for planning, promotion, facilitation, monitoring, and evaluation of research and innovation activities at CEMK.

The RDC will operate under the overall supervision of the Director and will coordinate with all academic departments, centres, cells, and committees engaged in research, innovation, incubation, consultancy, entrepreneurship, and intellectual property activities.

6. Organizational Structure

6.1 Research Advisory Council (RAC)

The Research Advisory Council will be the apex policy-making body of RDC.

Composition

- Director - Chairperson
- Director, RDC - Member Secretary
- Dean (Academics)
- Dean (Research & Innovation) / Senior Research Coordinator
- Heads of Departments
- IQAC Coordinator
- Coordinator, IIC
- Coordinator, Incubation & Entrepreneurship Cell
- Finance Officer/Accounts Representative
- Two Distinguished Researchers from CEMK
- One Industry Expert
- One External Academic/Research Expert

Functions

- Approve institutional research policies.
- Approve annual research plans and budgets.
- Review research performance.
- Recommend strategic collaborations.
- Guide establishment of Centres of Excellence.

6.2 Director, RDC

The Director of CEMK will nominate a senior faculty member with significant research credentials as Director, RDC.

Responsibilities

- Overall coordination of RDC activities.
- Implementation of research policies.
- Liaison with funding agencies.
- Monitoring research projects.
- Promotion of research culture.
- Reporting to RAC and Governing Body.

7. Functional Committees of RDC

To ensure effective implementation, RDC may establish the following committees:

A. Research Promotion and Funding Committee

Functions:

- Identify funding opportunities.
- Support proposal preparation.
- Facilitate project submission.
- Organize grant-writing workshops.

B. Research Monitoring and Review Committee

Functions:

- Monitor project progress.
- Review project outcomes.
- Maintain project databases.
- Conduct periodic research audits.

C. Industry Collaboration and Consultancy Committee

Functions:

- Promote industry-sponsored research.
- Facilitate consultancy services.
- Develop MoUs and partnerships.
- Strengthen industry-academia interaction.

D. Intellectual Property Rights (IPR) and Innovation Committee

Functions:

- Facilitate patents, copyrights, and trademarks.
- Conduct IPR awareness programmes.
- Support commercialization and technology transfer.

E. Ethics and Research Integrity Committee

Functions:

- Promote ethical research practices.
- Address plagiarism issues.
- Recommend ethical compliance procedures.

- Monitor adherence to publication ethics.

F. Research Information Management Committee

Functions:

- Develop institutional research databases.
- Maintain research repository.
- Manage research information systems.

8. Research Governance

CEMK will establish a transparent and accountable research governance framework through:

- Institutional Research Policy
- Research Ethics Policy
- Consultancy Policy
- IPR Policy
- Seed Grant Policy
- Industry Collaboration Policy
- Research Incentive Policy
- Publication Policy

The governance framework will provide adequate autonomy to Principal Investigators while ensuring accountability and compliance.

9. Research Ecosystem and Collaboration

The RDC will facilitate:

National Collaborations

- IITs, NITs, IISERs, Central Universities
- CSIR, DRDO, ISRO, ICAR laboratories
- Government agencies
- MSMEs and industries

International Collaborations

- Universities abroad
- International research organizations
- Joint research projects
- Faculty and student exchange programmes

Regional Collaborations

- MAKAUT-affiliated institutions
- Research consortia
- Innovation networks

The RDC will actively encourage interdisciplinary, multidisciplinary, and translational research.

10. Research Information Management System (RIMS)

CEMK will establish a Research Information Management System for maintaining records related to:

- Faculty research profiles
- Publications
- Patents
- Research projects
- Consultancy assignments
- Research collaborations
- Fellowships
- Awards and recognitions
- Research infrastructure

The RDC will maintain an Institutional Research Repository and facilitate integration with:

- Shodhganga
- Shodh Gangotri
- Shodh Sindhu
- Shodh Shuddhi
- INFLIBNET services.

11. Research Thrust Areas

Considering the academic strengths of CEMK, the RDC will promote research in the following priority areas:

Engineering and Technology

- Renewable Energy Systems
- Hybrid Solar-Hydrogen Microgrids
- Smart Grid Technologies
- Power Electronics and Electric Mobility
- Artificial Intelligence and Machine Learning
- Internet of Things (IoT)
- Cyber Security
- Robotics and Automation
- Sustainable Manufacturing
- Advanced Materials

Emerging Areas

- Climate Change and Sustainability
- Green Energy Technologies
- Smart Agriculture
- Water Resource Management

- Industry 4.0
- Data Analytics

The thrust areas may be revised periodically based on emerging national priorities and institutional strengths.

12. Research Promotion and Capacity Building

The RDC will organize:

- Faculty Development Programmes (FDPs)
- Research Methodology Workshops
- Proposal Writing Workshops
- Statistical Analysis Training
- IPR Awareness Programmes
- Patent Filing Workshops
- Entrepreneurship Development Programmes
- Research Internship Programmes
- National and International Conferences
- Distinguished Lecture Series

Special emphasis will be placed on mentoring young faculty members and student researchers.

13. Research Incentives and Recognition

CEMK will institute incentive schemes for:

Faculty

- Funded research projects
- High-quality publications
- Patents granted
- Consultancy projects
- Technology transfer activities

Students

- Best research paper awards
- Innovation awards
- Patent awards
- Start-up and entrepreneurship awards

Institutional Awards

- Outstanding Researcher Award
- Young Researcher Award
- Best Department in Research Award
- Innovation Excellence Award

14. Technology Development, Innovation and Entrepreneurship

The RDC will work closely with:

- Institution's Innovation Council (IIC)
- Incubation Cell
- Entrepreneurship Development Cell
- Industry Interaction Cell

Key focus areas will include:

- Prototype development
- Product innovation
- Start-up promotion
- Technology commercialization
- Industry-sponsored projects
- Patent generation

15. Financial Resources and Research Funding

The RDC will facilitate:

Internal Funding

- Seed grants
- Minor research grants
- Conference support
- Patent filing support

External Funding

- DST
- SERB
- AICTE
- UGC
- CSIR
- DRDO
- ISRO
- Ministry of New and Renewable Energy (MNRE)
- Industry-sponsored funding
- CSR funding

Research Corpus Fund

CEMK will endeavour to establish a Research & Innovation Corpus Fund for supporting research activities, infrastructure development, and innovation initiatives.

16. Research Integrity and Ethics

The RDC will ensure:

- Academic honesty and transparency.

- Compliance with ethical research practices.
- Mandatory plagiarism screening.
- Responsible authorship.
- Avoidance of predatory journals.
- Data integrity and confidentiality.
- Compliance with applicable regulatory requirements.

All theses, dissertations, and manuscripts will undergo plagiarism screening using approved software.

17. Research Infrastructure Development

The RDC will facilitate:

- Establishment of advanced laboratories.
- Shared instrumentation facilities.
- Research computing facilities.
- Digital library resources.
- Centre of Excellence initiatives.
- Laboratory accreditation and quality assurance measures.

18. Research Monitoring and Evaluation

The RDC will conduct:

Quarterly Review

- Status of ongoing projects
- Research outputs
- Funding utilization

Annual Review

- Publications
- Citations
- Patents
- Consultancy revenue
- Collaborative projects
- Research grants

Research Audit

A comprehensive annual research audit and SWOC analysis will be conducted to evaluate institutional research performance and identify improvement opportunities.

19. Expected Outcomes

The RDC will strive to achieve:

- Enhanced research culture across departments.
- Increased external research funding.
- Growth in quality publications.

- Increased patent filings and grants.
- Stronger industry-academia collaborations.
- Improved institutional rankings and accreditation outcomes.
- Establishment of Centres of Excellence.
- Enhanced innovation and entrepreneurship ecosystem.
- Greater societal and industrial impact.

20. Review and Amendment

These Guidelines will be reviewed every three years or earlier if required due to amendments in UGC regulations, NEP provisions, statutory requirements, or institutional needs.