

**PROCEEDINGS OF THE COMMISSIONER, COLLEGIATE EDUCATION
ANDHRA PRADESH :: VIJAYAWADA
PRESENT : DR. POLA BHASKAR, IAS**

Proc. No. 001/Academic Cell/RDC - Research & Innovation/AC-11/2022 Date :10.05.2022

Sub: - Establishment of RDCs in GDCs & SOP for Research & Innovation - Reg.

--o0o--

The National Education Policy 2020 (NEP 2020) emphasizes on the need for development in research in higher educational institutes (HEIs) in India in Chapter 17 of the policy, saying "A robust ecosystem of research is perhaps more important than ever with the rapid changes occurring in the world today, e.g., in the realm of climate change, population dynamics and management, biotechnology, an expanding digital marketplace, and the rise of machine learning and artificial intelligence. If India is to become a leader in these disparate areas, and truly achieve the potential of its vast talent pool to again become a leading knowledge society in the coming years and decades, the nation will require a significant expansion of its research capabilities and output across disciplines. Today, the criticality of research is more than ever before, for the economic, intellectual, societal, environmental, and technological health and progress of a nation".

It has arisen a critical necessity for Government Degree Colleges (GDCs) in the state of Andhra Pradesh to chase such challenging future goals while playing the pivotal role of HEIs, particularly in terms of research, innovation, and incubation. There must be an effective implementation plan to match the expectations of the NEP. The UGC, has released guidelines (enclosed) to establish Research and Development Cell (RDC) in Higher Educational Institutes (HEIs) in March 2022. The guidelines included a clear Vision, Mission, and Objectives of establishing RDCs in HEIs. Most importantly, National Assessment and Accreditation Council (NAAC) assesses Research, Innovation and Extension as a criterion for accreditation; so also "Research and Professional Practice" is a major influential parameter in National Institute Ranking Framework (NIRF) ranking.

Research may be envisaged as a means of acquisition and use of expert skills for the professional development of students, faculty and the HEIs. Innovation is the essential need to inculcate and develop novel skills to match the ever-evolving job market/industry requirement. The following activities are proposed to be undertaken in GDCs as a Standard Operating Procedure (SOP). In this context, the CCE is coming up with this SOP.

In this context, All GDCs are advised to scrupulously go through, adopt, and adhere to the procedures mentioned hereunder. Failing in which shall result in low/nil progression of research-based activities at the HEIs which could have a negative impact on the performance indicators of the HEIs with respect to recognition, accreditation, ranking etc., On the other hand, most importantly, the absolute purpose of HEIs as human resource development centres cannot be fulfilled.

I. ESTABLISHMENT OF RESEARCH AND DEVELOPMENT CELL

The UGC launched an initiative to establish a RDC in each HEI with the mandate for promoting quality research that contributes meaningfully towards the goal of a self-reliant India ("Atma-Nirbhar Bharat"), aligned with the provisions of NEP-2020. The UGC issued guidelines for the establishment of RDCs are extracted and reiterated hereunder to frame within the scope of GDCs.

Vision

“To put in place a robust mechanism for developing and strengthening the research ecosystem within HEIs, aligned with the provisions of NEP-2020.”

Mission

- ❖ To create a conducive environment for enhanced research productivity.
- ❖ To encourage collaboration across industry, government, community- based organizations, and agencies at the local, national, and international levels.
- ❖ To facilitate greater access to research through mobilization of resources and funding.

Objectives

1. To create an organizational structure with role-based functions of RDC, formulate Research Policy for the HEIs, identify thrust areas of research, and form related cluster groups/frontline teams/consortia of researchers.
2. To create enabling provisions in Research Policies for recruitment of research personnel, procurement of equipment, and financial management with adequate autonomy to the Principal Investigator(s) and disseminate research outcomes to stakeholders and the public at large.
3. To establish a special purpose vehicle to promote researchers and innovators, identify potential collaborators from industry, research organizations, academic institutions & other stakeholders for cooperation and synergistic partnerships.
4. To act as a liaison between researchers & relevant research funding agencies, extend guidance in preparation & submission of project proposals and post-sanctioning of the grants to oversee adherence to timelines.
5. To have better coordination among other cells/centres dealing with University-Industry Inter Linkage, Incubation, Innovation and Entrepreneurship Development and Intellectual Property Rights (IPR).
6. To develop an Institutional Research Information System for sharing the status of ongoing/ completed research projects/Programmes, expertise & resources, etc., making effective use of Information & Communication Technology (ICT) for preparing the database of in-house experts to provide industrial consultancy and services.

7. To engage & utilize the services of superannuated active faculty/scientists in research capacity building of talented young minds and promote mobility of researchers across institutions and R&D Labs.

8. To serve as nodal centre for ideation and conceptualization of research topics/themes by organizing workshops and training programs and ensuring the integrity and ethical practices in research activities including clearance of bioethical committee wherever required.

ORGANIZATIONAL STRUCTURE & FUNCTIONS

1. Governance

A Research Advisory Council (RAC) is to be constituted with the following composition to function as RDC.

1. Principal as the CHAIRMAN
2. A senior faculty (research experience is preferable but not compulsory) shall be nominated to act as CONVENER, & Committees, with two to three nominated faculty members and student representatives, to function as
3. Finance and Infrastructure Committee
4. Research Program Policy Development Committee
5. Collaborations and Community Committee
6. Product Development Monitoring and Communication Committee
7. IPR, Legal, & Ethical Matters Committee

The RAC shall look after all the research activities of the HEI with clear allocation of functions to respective committees and work as a Single-Window Operating System for effective functioning.

2. Administration

Planning, implementation, and monitoring of research activities in HEIs, formulating rules, regulations, and policy frameworks for utilization of facilities and resources at HEIs. The activities of RDC will be mentored and monitored by above committees for devising research models, technology, appraisal, foresight & review functions, mediating sectoral R&D progress, and IPR protection. RDC should keep a close contact with the Ministry Innovation Cell to make use of various innovative plans for facilitating the researchers.

3. Research Ecosystem/Collaboration

Building a 'Research Ecosystem' which is sustainable and leading to consistent quality research outcomes and enhanced productivity does encourage the students and faculty to take up research-based activities. The HEIs that are relatively new or not so well established should develop a connection with RDCs of already well-known/established HEI. Facilitating all the networking requirements, funding opportunities, faculty/student exchange, academic & industry collaborations, MoU opportunities, conducting FDPs or provision of such opportunities etc., under a single window functioning system helps in bringing up the research prospective of the HEI,

which is otherwise neglected due to existing guideless condition, or the hardships faced by individuals in the due course of taking up research and innovative activities.

4. Information Management System

To establish such an ecosystem as discussed above, a Research Information Management System (RIMS) is essential. RIMS shall maintain research-oriented information related to research databases, publications, research projects, fellowships, collaborations, patents, thrust research areas, innovations, conferences, workshops, publishing houses & publications etc. aligned with the institution's research policies. Also, it shall gather the information pertaining to subject experts, state-of-art research laboratories and sophisticated instrumentation facilities, digital libraries, intellectual property facilitation, quantitative methods, data analysis, analytical and consultancy services etc.,

Each HEI needs to 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 Shuddhi, and Shodh Chakra.

5. Human Resources for Research and Innovation

Procurement of Human Resources by collaborating and inviting Visiting faculty, Superannuated faculty, Expert Alumni, Scientists, Industry Experts and Emeritus Professors would fetch the HEI ecosystem an expert guidance and mentorship without much financial burden/no financial commitment.

6. Research Promotion

Promotion of research and innovation related activities by encouraging the staff and students by providing awareness of Research Thrust and Clustered Areas, Research Incentives and Recognition Opportunities like various Awards, providing Technology Development and Business Centred Facility to support the conceptualization of start-up ideas, pre-incubation, and guidance to establish start-ups and procure financial grants for such activities and scaling-up of the same.

7. Integrity and Ethics

Sensitizing of and ensuring the implementation of fair research practices like plagiarism check using standard software, fair publishing practices, ensuring that the research work gets published only in peer reviewed journals e.g., UGC-CARE listed journals.

8. Capacity Building

Building the capacity of faculty and students to undertake research problems in line with the latest advances in diverse disciplines to push the boundaries of knowledge through publications and contribute to technological developments relevant to societal needs. It would also pave the way for HEI to attract more research grants under norm-based funding, improve its accreditation ranking and enhance its brand image. Regular events such as refresher courses, workshops, training/internships, group discussions and seminars/conferences may be organized for capacity

building. RDC would play a pivotal role in creating central R&D facilities with the provisioning of associated training/internship thereon.

9. Research Monitoring

The current policy environment in India encourages HEIs to be responsible and accountable for research development and innovation activities through the creation of infrastructure, generation of resources, promotion of business, and facilitation of policy framework to nurture the culture of quality research by adhering to ethical practices. Among the standard functions, the RDC in an HEI needs to monitor and oversee research progress, coordinate program, manage and facilitate optimizing resources, and timely review of research activities for completion of the projects as per schedule. HEIs need to formulate and adhere to specific quality benchmarks for research to meet the global/ international standards. The proposed RDC should conduct a quality review (SWOC Analysis) or internal evaluation of the research papers and suggest Scopus Indexed, Web of Science (WoS), or UGC-CARE recognized journals for appropriate publications. R&D Cell of HEIs must ensure that all the Research Labs in the institution fulfil the norms of Good Laboratory Practices (GLP) and Safety (Bio and Chemical) measures. Getting recognition as a QIP centre would be an added advantage to the HEI.

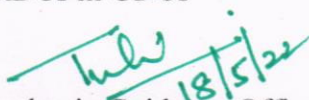
Some important Research and Innovation based activities to be taken up by RDCs, their standard operating procedures, outcome, role of RDC, students, faculty, HEI/Principal are discussed hereunder. Activities that are suggested to be implemented at the level of students must be monitored by concerned mentor/faculty & RDC, likewise, activities to be implemented at the level of faculty/HEI must be monitored and taken care of by RDC and Principal. Apart from the outcomes discussed, a better score in NAAC evaluation, NIRF, ISO certification etc would result. Though the terms used in this document sound sophisticated, the very nature of their functioning is as basic as gathering all the necessary information and disseminating it to the needy staff or students, encouraging them to apply/participate, follow up & maintaining records of the activities for uplifting of the research ecosystem in the college, which eventually help the institution in accomplishing the vision statement. Some web links are also provided to help in better understanding and adopting the activities discussed. HEIs (GDCs) shall strive sincerely to implement the maximum, but not limited to, the activities discussed in the document. Although the roles of student/faculty/in-charges of the departments/Principal are suggested in the document, collective effort of all the stakeholders is required to implement the guidelines. Most important to note is that funding required for any activity may be met from internal resources or external grants.

Sd/- Dr. Pola Bhaskar, IAS.
Commissioner of Collegiate Education

Copy to RJDCEs, Principals of All GDCs, A.P.

ANNEXURE: Important activities to be implemented & monitored by RDCs in GDCs

//ATTESTED//


18/5/22
Academic Guidance Officer

ANNEXURE - IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs						
S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
1	Student Study Projects (SSPs)	Student	Implementing Regular SSPs ensuring that every student undertakes at least one (1) SSP in all the core subjects with proper study report/ dissertation.	Experience in framing and testing hypotheses, skills in research methodology, understanding results as per research logic /conclusions, and writing research reports.	<ol style="list-style-type: none"> 1. RDC shall collect and keep the list of topics in each subject/course in research thrust areas. 2. Design / Approve convenient formats for Project-log and SSP register. 3. Design / Adapt Evaluation Weightages for SSPs. E.g., Weightages for Project Log, Project Implementation, Project report, Presentation etc., 4. Maintain a database of all the SSPs and their outcomes 5. Encourage the concerned mentor/student to publish, patent, and scale-up the project outcome. 	<ol style="list-style-type: none"> 1. Study mentor with subject expertise must be assigned to each student, so that an SSP will be a 'One on One' project 2. Every student must select a unique topic related to the course/program, and chalk-out timeframe, requirements, and methodology with the help of the mentor. 3. Project-log must be maintained by every student in a convenient format, in consultation with the mentor. It should contain a list of project activities, methodologies used, results obtained/data gathered, documentation done, on a daily basis like a diary. 4. At the end of SSP, students must submit a Dissertation along with the Project log for evaluation; Also, a Presentation or Viva-voce may be conducted according to the SSP weightage. 5. An SSP register with all the details of each SSP, including awarded score/grade must be maintained by the mentors, semester/year-wise.

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs						
S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
2	Internships	Student	Undergoing Internships at Recognized research institutes or R&D departments of various industries.	Fulfilment of program credits and simultaneous research upskilling in the latest industrial need.	RDC, as part of its RIMS, shall maintain a database of available recognized Research Institutes or R&D departments of various industries that offer/accept internships, and make MoUs with them. Database must include Regional/National/International Internships opportunities.	As part of Internship programs intended for UG/PG courses as prescribed by APSCHE Revised CBCS framework, Students must be encouraged to take up internships at recognized Research Institutes or R&D departments of various industries, duly following the procedures prescribed by APSCHE for Internships.
3	Apprenticeships	Student/Institute	Introducing Apprenticeship based programs or obtaining apprenticeship opportunities from R&D departments of various industries.	Increased admissions in the HEI. Assured placements and upskilling in the latest industrial need.	<p>1. RDC, as part of its RIMS, shall maintain a database of the courses offered by skill sector councils, a database of available recognized Research Institutes or R&D departments of various industries that offer apprenticeships, and make MoUs with them.</p> <p>2. RDCs of autonomous colleges may try to start at least one of these courses from AY 2022-23.</p>	<p>1. Introduction of Skill-embedded UG/PG courses by obtaining MoUs with recognized research institutes or R&D departments of various industries, duly following the procedures.</p> <p>2. Advertise/Popularize the program and its benefits through admission campaigning, detailed brochure on the program with program outcomes and attract students.</p> <p>3. Maintain a record of 'Research and Innovation Based Apprenticeships', separately, for each skill embedded course, student-wise with all the details including the stipend particulars.</p>

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs

S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
4	Inclusive activities	Student	Introduction of research learning platforms like CUBE, Chai & Why (references given below) and such outreach programs offered by prestigious research institutions to students.	Development of curiosity for research, Understanding of science concepts	<ol style="list-style-type: none"> 1. RDC shall identify the inclusive programs like CUBE and Chai & Why and send the information to all the departments. 2. RDC shall track and keep a record of the activities undertaken and try to adopt such programs as part of the college outreach programs. 3. Based on the feedback, RDC shall bring any changes in the implementation of the inclusive activities. 	<ol style="list-style-type: none"> 1. Students shall be sensitized of such programs and be formed into groups as per their interest, from each department. 2. Each group shall choose a supporting Mentor from faculty. 3. With the help of RDC, a schedule for participating in these programs shall be prepared and informed to all the participating students. It is preferable that the schedule is planned beyond teaching hours or on holidays. 4. Mentors must provide links to these inclusive programs as per the schedule and encourage them to participate. 5. After participation, feedback may be received from participated students and record the outcome of participation. 6. With due popularization of these programs in the campus, other students may also get inspired and participate.

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs						
S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
5	Student Exchange Programs	Student	Exchange of students within GDCs nearby or with HEIs under collaboration for a short span.	Exposure to new research and academic environment and acquisition of new skills and academic contacts	RDCs shall identify the research-infrastructure gaps in the college and make MoUs with member DRC colleges, other Academic institutions with such facilities and plan for short term student exchange programs for research training.	<ol style="list-style-type: none"> 1. Students must be encouraged to go on exchange and prepare a list of students who are interested. 2. A detailed SE schedule must be prepared and communicated in advance to the partner HEI. 3. Arrangements must be made for travel & hostel accommodation of students as per the MoU. 4. After completion of the program as per the schedule, feedback must be obtained, and action may be taken accordingly. 5. All records shall be maintained by the department/mentor who sends/hosts the students for exchange.
6	Research Competitions	Student	Conduct of research competitions like Quiz, Article writing, Science Shows etc.,	Assessment of self-skills and interaction with other similar minded students and gets incentivized.	Plan various academic competitions in a Research-oriented way. i.e., Topics for competitions may be chosen from research thrust areas identified by the RDC.	<ol style="list-style-type: none"> 1. All departments shall encourage students to participate in research-oriented competitions as planned by RDC. 2. Organize the competitions like Science shows at college level, Article writing at department/college level. Notifications shall be given in advance which allows the students to prepare for the competitions innovatively. 3. Records of list of participants, evidences of participation, score sheets and award list must be preserved for verification.

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs						
S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
7	Trips to Research Centres	Student	Planning to visit science museums, research centres and interaction with scientists at the place of visit.	Introduction to the new horizons, & scope of research and a means of inspiration.	Ensure that some of the field trips are conducted in a Research-oriented way. i.e., Trips to nearby research centres, R&D departments or nearby University departments that have good potential in research. RIMS maintained by RDC is useful for planning.	<ol style="list-style-type: none"> 1. Convert the regular subject field trips to research-orienting trips, so that students are motivated to take up research activities. It also motivates them in setting their career goals in research. 2. Same procedures followed for field trips are to be followed and records shall be maintained.
8	Academic writing	Student/Faculty	Encouraging and ensuring that the students and staff do take up (or) Implementation of - Academic writing programs either offline in the institute or online via MOOCs.	Skills in writing manuscripts such as articles, columns, chapters, books, dissertations, theses etc.,	<ol style="list-style-type: none"> 1. There are many Academic writing courses available online like Coursera, Udemy, edX etc. Identify, maintain, and circulate such details among the students. 2. With the help of interested faculty, Add-on courses must be planned in coordination with IQAC. 3. Faculty must be encouraged to take up the online courses, so that they can conduct add-on courses in the HEI. 	<ol style="list-style-type: none"> 1. All departments, particularly, Arts, Languages and Commerce departments shall motivate the students to take up Academic writing courses either Online or Offline (if offered by the HEI) 2. List of students/faculty who take up the activity shall be maintained. 3. Follow-up shall be done with respect to timely completion of the courses and records shall be maintained. 4. Interested faculty/departments shall conduct Add-on courses by following the due procedures for the conduct of Add-on courses.

II. IMPORTANT ACTIVITIES TO BE IMPLEMENTED & MONITORED BY RDCs IN GDCs

S#	Activity	Level of Implementation	Description	Possible Outcome	Role of RDC	Standard Operating Procedure (SOP)
9	Research Projects	Faculty	Encouraging & ensuring that maximum staff members do write for project grants (Minor/Major Research Projects) offered by various funding agencies like UGC, DST, DBT, CSIR, etc., This can be achieved with the help of RDC of the HEI.	<ol style="list-style-type: none"> 1. Mobilization of research grants, 2. Improvement of research facilities and infrastructure. 3. Scope for high impact publications, 4. Opportunities for students to participate in sponsored research projects. 5. Scholarly recognition for the HEI. 	<ol style="list-style-type: none"> 1. RIMS shall include the funding programs of various funding agencies like UGC, DST, DBT, CSIR, ICMR etc., 2. Regular meetings shall be conducted to identify and motivate the faculty with research interests. 3. Research proposals from the staff shall be invited regardless of the funding opportunities; so that these proposals can be readily submitted when funding windows are open. 4. RDC must monitor the advertisements / notifications issued by the funding agencies, timelines as advertised by the agencies must be circulated among the staff well in advance. 5. Any help required, may be extended to the faculty who apply for funding. e.g., drafting of the proposals. 	<ol style="list-style-type: none"> 1. In-charges of all departments shall identify the scope for the conduct of research with the help of the faculty. 2. Research topics in thrust areas as identified by the RDC must be discussed among the staff members during departmental meetings and identify the topics that match the scope of the department. 3. Research proposals must be prepared in the format of the funding agency to which proposals are intended for and kept ready for submission through RDC. 4. Once sanctioned, Principal investigator must ensure that all due procedures are followed while utilizing the grants as per the sanction guidelines and submit 'utilization certificates' in the prescribed formats with proper auditing. 5. Involve faculty/students of the department in research projects sanctioned wherever possible, which helps to create an active research ecosystem in the department. 6. PI shall submit project reports within the timeframe of the project. 7. PI shall write research articles with the research data obtained in the project and communicate for publications.