



Progressive Education Society's

Modern College of Arts, Science and Commerce Ganeshkhind, Pune

College with DBT Star Status
Energy Cons. Mgmt Award

Best College Award
Best Principal Award

NAAC 'A' Grade
DST-FIST Sponsored college

Strategic Research Plan

2017-2022

1. Introduction

Progressive Education Society's Modern College of Arts, Science and Commerce, Ganeshkhind, established in 1992 with strength of 120 students with just two traditional courses on offer has reached a milestone with 4700 students on roll under 21 under-graduate, 10 post graduate and some PhD courses in various classical and interdisciplinary courses in Humanities, Social Sciences, Commerce, Life Sciences, Electronics, Natural sciences, Statistics and Mathematics, to name a few.

Modern College Ganeshkhind is permanently affiliated to the Savitribai Phule Pune University (SPPU). Through visionary leadership of parent body headed by a renowned academician Prof. G. R. Ekbote and the hard-work of our Principal Dr. Sanjay Kharat, the college took a stride forward especially after getting 2f and 12B status from the University Grants Commission, New Delhi in the year 2009, which made the college eligible for receiving central grants. The college has been awarded with highly prestigious **Star Status** from the Department of Biotechnology (DBT), Government of India, being the first college under SP Pune University. The college is supported under FIST program of the Department of Science and Technology (DST), Government of India. With very supportive management, this college has become a well-known Educational Institution in a short span of 25 years. In such a short span the college has received different coveted awards instituted by SPPU viz. Best College Award, Best Principal Award, Best College Award for Student Welfare Board and Program Officer of the Board Award, Best NSS Unit and Program Officer Award, Best College Magazine in District and at University level as also Jagannath Rathi Award for Best College. Such accolades have encouraged us to take more efforts and to remain at the forefront of higher educational scenario in Pune. One more achievement we are proud of is that Maharashtra Energy Development Agency (MEDA) has honored us with a State level award for excellence in Energy Conservation and Management recognizing us as a *Green Educational Institute*.

The main element that makes the College a real learning institute is our student community. Our goal is to create and develop "Modern" youth as responsible citizens with multidimensional personalities by inculcating a blend of cultural awareness, compassionate and progressive attitude, scientific insights and time-tested traditional values among our learners. We

have started different skill development course to supplement their class-room teaching and also to make our students employable. Now in the last decade, we have received students from 24 Indian states and more than 18 countries. We welcome minority students and we provide enabling environment to differently abled students as well. The striking feature is 51% of the total student strength belongs to girl-power.

The college in its journey towards excellence adopted various policies for overall and sustainable improvement in the research activities. The concerning body of management sensitized, encouraged and supported the faculty members for developing and submitting research proposals to various funding agencies for extramural support. The parent body has made a provision of providing seed money for the research aspirants. Consequently, more than 70 extramural research projects have been completed by the faculty members and have received research grants in the tune of Rs. 2 Crores from various funding agencies like University Grants Commission, Department of Biotechnology (DBT), Government of India, Board of Research in Nuclear Science, Department of Atomic Energy (DAE-BRNS), Government of India, Department of Science and Technology (DST), Government of India, Science and Engineering Research Board (SERB), Government of India and Indian Space Research Organization (ISRO), Government of India. The college has made a remarkable growth in developing academic and industrial collaborations. An MoU between RMIT University, Australia and Modern College is in place for collaborative research and student and faculty exchange. All these steps have resulted in a great impact on development of a research environment in the college with various noteworthy achievements including nomination/receipt of prestigious Dr. Shyama Prasad Mukherjee Award to 3 students. One of the striking features of the college is that more than 1500 under-graduate and 700 post-graduate students have undertaken independent research projects so far in last 5 years. The students and faculty members have substantial number of publications in research journals of repute besides being able to file patents.

We have qualified and experienced faculty members. The college takes initiative for the development of teaching and non-teaching staff. The teaching staff members are encouraged to participate in Orientation Programs and Refresher Courses conducted by different Higher Education Institutes and Universities. Our teachers are engaged into research projects have also published research papers in International and National Journals of repute and one of our teachers has been granted a patent. As the faculty members are encouraged for pursuing research,

we boast 40+ faculty members being the Ph.D. holders and over ten staff members are pursuing their doctoral research currently. The teachers of the college have individual and departmental collaborations with national and state level research institutes. The staff members are encouraged to attend different seminars, conferences and to learn from their peers in their respective areas. The college is a member of the Higher Education Forum that works on the best policies in Higher Education in India.

Our stakeholders would be happy if their expectations of infrastructure match. So we have consciously upgrading our physical infrastructure. We have ITC enabled classrooms, well equipped Laboratories, hi-tech Computer Laboratories, well-stocked Library also a Digital Library with internet facility, a computerized Administrative Office. Such state- of-the-art infrastructure enables the college to provide learner-centric environment. This physical infrastructure has been supplemented with an aesthetic touch by having greenery, a Botanical Garden and a water fall to add to the natural scenic background. We have installed Solar-Wind Hybrid Green Energy Project to use non-conventional energy resources and to reduce our carbon foot-print.

The college has made a memorable journey so far and has established itself as an excellent centre for higher education in Pune city. However, we are keen to do even better and in-sync with the national policies providing students necessary training and skills to convert their project ideas into products to benefit the society and initiate the start-ups.

The College has developed a perspective research plan for the period of 2017-22, with special attention given to the developing a research and innovative environment in the college.

2. Vision and Mission

Vision

The College Envisioned to Become a Leading Centre for Collaborative and Innovative Research.

Mission

Nurturing the research in natural sciences, humanities and commerce disciplines with contemporary and social relevancies. The college is committed to provide necessary support, infrastructure and training for promoting the high-quality research with maintaining the highest ethical values and responsibilities.

3. Research Objectives

Objectives

Modern College of Arts, Science and Commerce, Ganeshkhind, Pune is committed to build on its strengths to create and maintain a healthy research environment which will:

- Promote the research and innovation with contemporary relevance and useful for the society and ultimately for nation-building
- Encourage, foster, promote the research activities and sustain the excellence
- Enhance existing research areas and develop expertise in emerging fields.
- To provide seed money and encouragement to the budding researchers
- To encourage and facilitate the inter-disciplinary and multi-disciplinary research
- To develop collaborations and research partnerships with academic and research institutes in India and abroad and industries
- Develop required research infrastructure and to provide research framework and guidelines to faculty, research scholars and students
- To ensure integrity, quality and Code of ethics in research
- To inspire socially useful research with potential for commercialization.

Strategies

In order to strengthen the research culture in the college, following activities are planned:

- Involvement of more and more students in research activities
- To apply for funding support for our research activities to funding agencies.
- To establish new research centers and to strengthen the existing ones
- Organization of workshops, interactive sessions and hands-on-training programs for teachers
- Establishment of a multidisciplinary research center with Central Instrumentation Facility
- Encouraging faculty and students to attend national/international conferences/symposia.
- Organization of national/international conferences/symposia/workshops
- Development of linkages and collaborations with academia and industries
- Encouragement for research paper publication in authentic and genuine research journals preferably covered in Web of Science/Web of Social Science and/or Scopus databases
- To emphasize on the collaborative research
- Provision of incentives to promote quality research outcomes

4. Guiding Principles

The college has formulated the following guiding principles that reflect the dedication of the college to the quest of research excellence. Since research outputs have the tremendous potential to impact the society, directly or indirectly by underpinning the advancement of knowledge, and can be expressed as social, economic, environmental, or cultural benefits, the college has adopted the research guiding principles as follows:

- Engagement of students in research activities provides them opportunities of interactive-learning, learning-by-doing and builds their research skills
- Generate ideas to pursue both curiosity-driven and solution-based research to address the current problems
- Innovations in scientific, social and pedagogical areas through the development of new technologies

- Research motivates students for creativity, inculcates scientific temper and supports the socio-economic, cultural development of the community
- Research and teaching-learning are intrinsically linked and complementary
- Research engagement supports professional development of faculty and helps them in curriculum development

5. ‘Code of Ethics’ and ‘Biosafety’

Modern College of Arts, Science and Commerce, Ganeshkhind, Pune strictly adheres-to and follows the code of ethics and biosafety rules and regulations as laid by the concerned bodies and S. P. Pune University. The college has established a ‘Board of Research and Innovation’ along with a ‘Ethical and Biosafety Committee’. Following rules and regulations are conveyed to all the students and research guides/project investigators engaged in the research activities:

Responsibilities of a Research Investigator/Research Guide

The project investigator/coordinator or research guide must not only put together the research students but also try to assemble an adequate financial and administrative structure to support the research. A supervisor not only provides guidance and advice to individual students in the research but also make them aware of responsibility for the scientific integrity of the whole research activity.

Data / Reports

Research Guides and Project Investigators are directed to take the necessary steps to check the details of experimental procedures and the validity and authenticity of the data or observations reported by them or by the research scholars working under their supervision, including periodic reviews of primary and secondary data as well as reports prepared by the scholars. The reports of the research outcome must be checked for the accuracy of the recorded data or observations, failing to which would be considered as a breach of research integrity. The data must be authentic and be based on the outcome of original activities of researcher and not from other sources, or with proper credit sharing or citations wherever necessary. Any intentional or

reckless disregard for the truth in reporting observations may be considered to be an act of research misconduct. The university guidelines are made available to all the researchers:

http://www.unipune.ac.in/uop_files/Report-Guidelines_20-5-15.pdf

Ethical policy of UGC on dissection of animals

The college has a clear policy that every researcher must follow ethical policy on animal dissection as prescribed by the University Grants Commission (UGC):

https://www.ugc.ac.in/pdfnews/6686154_guideline.pdf

and the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA):

http://cpcsea.nic.in/Content/55_1_GUIDELINES.aspx

Originality and acknowledgement of sources

The research work must be original and come from research outcome of the respective researchers. If help is taken from other sources, should be acknowledged properly.

Disclosure and conflicts of interest

Researchers may use institutional resources including staff, equipment, information or confidential information with prior permission of Principal or Heads of the Departments. Researchers should strictly use the institutional resources for any purpose other than related to the teaching, research or service by the Institution, unless prior permission has been obtained by the head of the department and/or the Principal.

Duplication of Publication

Research articles should preferably be published in UGC notified journals or the journals covered in Web-of-Science/Web-of-Social Science databases. Researchers should not publish the same research outcome in two different places to avoid duplication.

6. Plagiarism Policy

The college strictly follow and is adhere to the plagiarism policies decided by UGC and Savitribai Phule Pune University, Pune, available at the following links:

https://www.ugc.ac.in/pdfnews/8864815_UGC-Public-Notice-on-Draft-UGC-Regulations,-2017.pdf

http://unipune.ac.in/administration_files/pdf/Plagiarism_Policy_University_14-5-12.pdf

The college aware researchers about these policies. All the research guides are instructed to submit the project reports and theses only after plagiarism check using appropriate software.

7. Research Initiatives

The authorities of the parent body Progressive Education Society, the CDC/LMC, Principal and IQAC of the Modern College of Arts, Science and Commerce, Ganeshkhind, Pune are very keen and proactive in promoting a vibrant research culture amongst the faculty and students. College has instituted a Board of Research and Innovation, which in coordination with the IQAC of the college takes care of the requirements for the research work carried out in the college. The committee has recommended few reforms such as providing seed money for research projects, improvement of existing research facilities, purchase of instruments as well as good research journals and books.

- a) The IQAC encourages the faculty members to submit project proposals to funding agencies and provide them all necessary support.
- b) College facilitates effective implementation of the sanctioned research projects, timely auditing and submission of utilization certificate and reports to the funding authorities.
- c) College has taken efforts for submitting research proposals to various funding agencies including SERB, DAE-BRNS, UGC, ISRO, SPPU, DBT and DST.
- d) The college has made a provision of providing seed money for budding researchers.
- e) College has made a noteworthy progress in introducing research projects at undergraduate levels, a culture widely appreciated by the authorities of DBT, Government of

India. Consequently, the college has been awarded with highly prestigious STAR STATUS from DBT, with sanctioned grants of Rs. 2.82 Crores for three years (2017-2020).

- f) The college has been supported under FIST program of DST, Government of India (Rs. 79 lakhs).
- g) The funds were properly utilized for generating and upgrading the research facilities following the norms of funding agencies strictly.
- h) Research ambiance is upheld via establishing the linkages and collaborations with academic and research institutes, in India and abroad.
- i) The college is keen on starting new as well as smooth running of the recognized research centers in departments.
- j) The College has formed the Board of Research and Biosafety and Ethical Committees as per UGC and SPPU's guidelines for following proper code of ethics. The committee governs the day to-day research requirements for the smooth functioning of research endeavors.
- k) The college encourages and sponsor the faculty as well as students to attend research events and to publish research articles in peer reviewed journals.
- l) The college organizes scientific events viz. conferences, seminars and workshops to provide sound platform to researchers of the college to update their skills, present their findings and interact with external experts and participants.
- m) Lectures of well-known experts are arranged regularly and staff and students are stimulated to interact with them.
- n) Teachers are encouraged and motivated by the IQAC to undertake research activities like projects and participation in AVISHKAR, a state level science competition.
- o) Students sent to National Research Centers like NCL, NCCS, ARI for completing their research projects.
- p) The college IQAC take keen interest and efforts in sensitizing the students and faculty members for developing a research environment in the college. The students are encouraged towards learning-by-doing and hands-on-approaches and accordingly various programs are arranged on campus.

- q) Various activities including ‘Science Exhibition’, and ‘Research Induction’ workshops are organized regularly by the college.
- r) Adequate support is provided for the consultancy and collaboration.

The efforts made by the Research Board and IQAC has shown beneficial results, such as:

- a) The college has played a leading role in establishing the ‘IQAC Cluster’ amongst several colleges from the state for exchange of innovative ideas, use of infrastructure and exchange of students for summer/winter training programs.
- b) College has recognized research centers in 4 departments
- c) College has received research projects worth Rs. 2 Crores.
- d) The college has started ‘Star Research Projects’ scheme for faculty members and students for identifying the high-potential research projects and funding them under ‘Star Status’ scheme of DBT, implemented at the college.
- e) Notable increase in the number of national and international conferences /seminars/and workshops organized by the institute, research publications in reputed research journals with high impact factors, high h-indices and faculty participation in conferences and seminars.
- f) Up-gradation of Laboratory facilities
- g) Computer and internet facilities for all the departments.
- h) LCD projectors, smart boards, interface experiments and sensors are made available.

8. Research Themes

S. No.	Name of the MPhil/PhD Guide	Name of the Department	Research Areas
1.	Prin. Dr. Sanjay Kharat	Zoology	Animal Physiology, Fish Ecology
2.	Dr. Jyoti Gagangras	Social Sciences	Sociology
3.	Dr. Sadhana Natu	Psychology	Women studies
4.	Dr. Savita Sabnis	Hindi	-
5.	Dr. Deepak Shendkar	Physical Education	Physical education, fitness
6.	Dr. Shakera Inamdar	Zoology	Entomology
7.	Dr. Ravindra Kshirsagar	Zoology	Entomology
8.	Dr. Rekha Gupta	Biotechnology	Plant Biotechnology
9.	Dr. Vinay Kumar	Biotechnology	Plant Molecular Biology, Antimicrobial Resistance
10.	Dr. Geetanjali Litake	Biotechnology	Microbial Biotechnology
11.	Dr. Madhuri Kulkarni	Chemistry	Organic Chemistry
12.	Dr. Sushama Katade	Chemistry	Natural products
13.	Dr. Mamta Shende	Commerce	Business Administration

9. Research Centers

Modern College of Arts, Science and Commerce, Ganeshkhind, Pune has following Recognized Research Centers of S. P. Pune University:

1. Zoology Department
2. Biotechnology Department
3. Chemistry Department
4. Microbiology Department

10. Collaborations and Linkages

1. RMIT University, Melbourne, Australia
2. Indian Institute of Science Education and Research (IISER), Pune, India
3. Bhabha Atomic Research Center (BARC), Mumbai, India
4. CSIR-National Chemical Laboratory (NCL), Pune, India
5. Forest Department, Government of Maharashtra
6. Vasantdada Sugar Institute (VSI), Pune, India
7. TOXINDIA, Pune, India
8. 'Mitrakida', Insect friend NGO, Pune, India
9. Biosphere NGO, Pune, India
10. Department of Environmental Science, Savitribai Phule Pune University, Pune, India

11. Proposed Activities and Collaborations

1. To develop research environment in the college and to reach out to students and all faculty members across the faculties
2. To start with conducting 'Research Induction Programs for Teachers' from all three faculties
3. To have issue-specific institutional objectives of research work
4. To identify 'One Institutional Research Theme' every year and to invite, help and assist teachers to take research work related to the theme and to take the outcomes to the components of the society
5. The members of the Research Board may have the sub-committees in their respective faculties to help and assist teachers for research
6. Steps to be taken for popularization of research and incentives and appreciation of achievers including creation of a separate webpage on college website as well as a separate YouTube Channel.

Dr. Vinay Kumar
Chairman,
Board of Research and Innovation

Prof. Parag Shah
Coordinator,
IQAC

Dr. Sanjay Kharat
Principal