

Institutional Distinctiveness: Promoting Science and Fundamental research

1. DBT builder scheme

Modern College was selected for Star College Scheme of the Department of Biotechnology (DBT), Government of India, in 2011. This resulted in an unprecedented growth in laboratory infrastructure developments, with procurement of large number of small equipments besides some high-end equipments, the laboratories were restructured and renovated, and were fixed with lab-safety measures. Overall, more than 1500 under-graduate and 700 post-graduate students have undertaken independent research projects so far in the last 5 years. The outcomes of many of these projects are published in peer-reviewed, indexed journals. Consequently, the college was awarded coveted 'Star Status' in 2017-18 with a sanction of Rs. 2.82 Crores. Notably, in awe of the recognition of our efforts toward inculcating research-based learning process, the college has been covered under highly prestigious DBT BUILDER program with a grant of Rs. 2.5 Crores. Under this program, the project ideas evolved during and under DBT Star scheme were taken up and gave rise to theme based long-term research projects with cross cutting appeal and inter-disciplinary nature including antimicrobial resistance in the environment and combating it with green nanomaterials, plant-environment interaction and stress responses and regulation at transcriptional and post-transcriptional levels and fish disease diagnostics and conservation with a focus on Western Ghats region.

2. From Laboratory to land

Anubhuti- Science faculty organizes the annual science exhibition Anubhuti for the last twenty years. It is an excellent opportunity for students to showcase their talent, innovation and experimental skills. Students participate in skill based programmes like Physicochemical and microbial analysis of soil, Analytical techniques in Chemistry, Biochemical Separation Techniques: Basic to Advance Workshop on nanotechnology, Mathematics magazine Prameya and Embedded Robotics to name a few. 'Conserve Mother Earth' program is an outreach activity organized for the last four years by the Department of Zoology in which teachers, students and children from rural and urban schools actively participate. The Department of Zoology organised an awareness program named Human- Gaur project in collaboration with Ministry of forests, Government of Maharashtra where students got an opportunity to take training from the Forest Guards and officers and

participate in the survey of Gaur, which is a threatened animal. The activities which have definitely added new dimensions to the experiential learning include UG and PG internships, research projects, organizing workshops and conferences, participation in 'Kisan Agri Expo', Tree plantation drives, 'Creative Food Contest', Astro Club, MAGNIT and our alumni hosted annual activity 'Vividha'.

3. Vedic maths

Department of Mathematics organizes certificate course in "Vedic Maths" every year. The main objective of this course is to solve the Mathematical problems quickly and accurately. Vedic Mathematics is a powerful technique of fast and accurate calculations based on simple rules and principles. Problems in Algebra, Geometry, Trigonometry, Arithmetic and quantitative aptitude can be solved. Last year the course was conducted online using Microsoft Teams due to covid -19 pandemic situation. Students were benefited to qualify various competitive examinations. Students can do fast computations.

4. Environmental projects- The students of S.Y. of all faculties undertake a compulsory course Environmental awareness and carry out field projects and visit Bird sanctuary, National Park, wildlife parks, biodiversity hotspots and Sewage or Effluent treatment plants. Through this the knowledge that is imparted to them in the classroom is confirmed through practical visits.

5. Astrophysics

The Department of Physics launched Astrophiles an Astro-club on 1st August, 2020. An official website of Astrophiles which contains information related to basic Astronomy written by our students.

<https://sites.google.com/moderncollegegk.org/astrophiles/> was published.

Under this club various activities like Quiz, lecture series and webinars were conducted. A certificate course in Basic Astronomy for students and teachers was conducted and 125 participants attended this course. The main attraction of this course was hands on training on Telescope Making. To go ahead with this activity the department has offered Astronomy and Astrophysics as an optional subject for T.Y.B.Sc. (Physics and B.Sc. Blended) course.

Evidence of success- It has also helped students to explore their capabilities and expand their horizon of knowledge. There is an increase in the number of students

opting for higher studies. Many students have started their own startups. The institution has been awarded by many apex bodies for these consistent efforts.