

The Title of the Practice- Marian Centre for Advanced Research

Objectives of the Practice-

To carry out scientific research with ethical considerations and creative ideas
To bring forward science and research to address societal needs, education and service
Take the research problems from the society and find solutions in the lab
To carry out sponsored research projects, sponsored fellowships/ assistantships
To promote the college-industry interaction by collaborations and MoUs.

The Context

The idea of a common research Centre under the banner of St. Mary's College was conceived during late 2017 and was materialized in 2018. The major objective of such research facility was to coordinate and conduct inter disciplinary research projects. Marian Centre for Advanced Research was thereby initiated. It works with its major objective, that of promoting science into day today life, bridging the gap between academia and society. MCAR emphasizes on the research activities focusing on the current issues in the field of life sciences.

The Practice

Marian Centre for Advanced Research provides an excellent opportunity for aspirants in the field of science research. The centre is equipped with experienced faculty members specialized in various domains of biotechnology carrying out domain specific and multidisciplinary research. The areas of focus are computational biology, toxicology, biochemistry, nanotechnology, plant biotechnology, physiology and molecular biology. The division has unique facilities with respect to research activities and with the state-of-the-art laboratories. The research projects carried out are outcome-based, addressing the current challenges and problems faced by the society. The activities at MCAR, is directed towards Research and Development which is a key ingredient in the all round development of students. Keeping this in mind, the College has been providing state of the art laboratories and instruments for the students to sharpen their research skills. The faculty constantly strives to inculcate a research oriented approach in students. This begins with the planning aspect of doing research and culminates in the successful completion of the research projects.

MCAR support research community providing a platform to exchange their views and interact for a more productive futuristic development in their fields. MCAR- Research Support Services (RSS) provides students of our college and neighbouring institutions

with personalized assistance and consultation throughout the complete cycle of their research efforts. RSS at MCAR helps researchers navigate the breadth of internal and external resources to maximize the collective potential.

MCAR offer needed support for Scientists, Researchers, Scholars and industrialists in their individual or institutional academic/scientific spheres. Scientific events are hosted throughout the year by ourselves as well as in association with other scientific societies or institutions. MCAR â€™Internship Program offers students with research interest to get involved in internship in Plant Biotechnology, Pharmacology, Nanotechnology, Bioinformatics, Applied Microbiology and Silico drug development in our facility. MCAR has facilitated interns from all over India for two to twelve weeksâ€™ period.

MCAR initiative for development of sustainable agriculture products develops new low cost supplementary products for organic farming, such as enhanced compost, flowering enhancers and microbial bio fertilizer.

The links established with other institutions enables transfer of technological skills and development of research aptitude in the participants and the extensive popularization of new products is a novel venture to enhance agricultural outputs.

The primary objective was devoted to strengthen practical knowledge in academics and research cadres thereby bridging the gap between academics, industries and society.

Evidence of Success

140 students have successfully completed their academic projects at MCAR. During 2019-2020 around 50 students did their academic projects in association with MCAR. In current academic year 2020-2021, 70 students are doing their academic projects at MCAR.

The bacterial based bio-fertilizer SMCNPK18 was developed and successfully distributed to 5000 farmers in various Panchayats through Unnat Bharat Abhiyan Scheme. MECSMC11-Microbially treated compost that reduce the required water for the growth of a plant, GEMS14 (Growth Enhancing Microbial Solution)- a flowering agent, to ensure economic viability by organic farming, VERMITOL - advanced bio fertilizer developed using earth worm as an incubator for soil enriching bacteria are some of the other products developed through the venture.

Problems Encountered and Resources required

Shortage of research funding for advanced research.
Purchase of equipmentâ€™s of high value is a deterring fact

Notes

The facilities of MCAR are extended to students and faculty from various institutions. A multidisciplinary research centre can be initiated by 2 or more departments to enhance research and development facility of the institution.

Title of the Practice - **Student Capability Enhancement Programme**

Objectives of the Practice

To facilitate skill development and employability potential

To enable students to get additional certifications during the period of study

The Context

The need for skill enhancement among the student community is widely discussed all over the country. To keep pace with the requirements of the industry, service and academia, the College has introduced various programmes. College aims that through various Skill Enhancement Programmes and certificate Programmes students, student upliftment can be ensured. As only two UGC sponsored Add ons are offered since 2015, College has initiated a number of number of courses.

The Practice

The College has rescheduled and extended its working hours by an hour to provide the students the opportunity to partake in various UGC Add on programmes and Certificate course since 2009. Apart from 2 UGC Add on programmes held since 2015 the College has started various skill enhancement programmes for I and II Semester UG students, and certificate course for III and IV Semester UG students respectively. Certain departments offered certificate courses for V sem UG and PG students. The departments offer one interdisciplinary Skill Enhancement Programmes and a Value Added Certificate Course. The course syllabus is reviewed and decided after discussion with stakeholders and in tune with the requirements of modern times. New courses replace the redundant ones. All the students are expected to join these programmes. 26 courses were offered in 2015-16 with 9 skill enhancement programmes, 14 certificate programmes and 3 UGC Add On programmes, 31 were offered in 2016-17 with 11 skill enhancement programmes, 13 certificate programmes

,6 UGC Add On programmes and an ASAP certificate programme. 32 programmes were offered in 2017-18 with 13 skill enhancement programmes, 13 certificate programmes and 5 UGC Add On programmes and an ASAP certificate programme. In 2018-19, the 36 programmes included 17 certificate programmes, 12 skill enhancement programmes, 6 UGC Add On programmes and an ASAP certificate programme. In 2019-20, 12 skill enhancement programmes, 15 certificate programmes, 6 UGC Add On programmes and an ASAP certificate programme was offered. The Duration of each programme is 30 hours. Evaluation is held after successful completion of 30 hour programme and certificates are provided to the successful students. Certain programmes are conducted with support of external faculty and also in collaboration with different agencies. Practical and theory sessions are held for certain programmes

Evidence of success –“ Student capability Enhancement Programmes could reduce the skill gap/ employability gap. The College aims to conduct new generation programmes in the years to come. College has prepared plans to conduct online programmes so that students learn more courses and acquire additional certifications at their own pace. The student feedback is an indicator of the success of the programme. The students are showing keen interest in the programmes and all the students appear for exams.

Problems encountered and resources required -The lack of proper scheduling of University exams poses difficulty in the timely completion of programmes. Separate programmes for I and II Semester UG students could not be conducted due to lags in University admission schedule. Paucity of time restricts field visits and more industry oriented practical sessions and also increase in duration of programmes.

Notes - There is good scope for Colleges to provide various certificate courses along with regular UG and PG Programmes. Colleges can also introduce diploma programmes also. This helps students save time and also receive certifications during their period of regular study.