

## **The Best Practice – Department of Mathematics**

**Title of the Practice:** Summer School

### **Objectives:**

- To help students improve their academic foundations/subject knowledge and develop new skills sets for the future.
- To inculcate/enrich research among the undergraduate and postgraduate students.
- To create opportunities for interdisciplinary research among the undergraduate and postgraduate students.
- Motivate students into higher studies and research in Mathematics.

### **Context of Summer School:**

The department of Mathematics conducts regular summer school in various mathematics topics during the summer vacation for 30 hours in every academic year. The courses will be conducted separately for undergraduate and postgraduate students with the subject expertise in that domain. It helps the students to improve their academics and provides research exposure.

- **Participants:**

The students of first and second-year undergraduate/first year post graduate students from CHRIST (Deemed to be University) and other colleges in Bangalore having an aptitude for higher learning in Mathematics participate in this summer school.

- **Resource Persons:**

The faculty in Christ who are expertise in the domain and the experts from various institutions take the sessions. The following are some of the external resource persons visited the campus to take the sessions and interacted with the students during the summer school.

1. Dr S. A. Choudum (Retired IIT professor)
2. Dr G Ravindra (Retired IIT professor)
3. Dr Mukti Acharya (Former Professor-Delhi Technological University)
4. Dr Pradeep G Siddeshwar (Senior Professor, Bangalore University)
5. Dr Veerappa Gowda (Senior Professor, TIFR Bangalore)
6. Dr Mahesha Narayana (Professor, University of West Indies, Jamaica)
7. Dr. Ummu Atiqah Mohd Roslan (Professor, University Malaysia Terengganu, Malaysia)
8. Dr Nyuk Sian Chong (Professor, University Malaysia Terengganu, Malaysia)

### **Conduct of Summer School:**

The summer school will be conducted every year during the summer break, mostly during April to May. The announcement of the summer school will be circulated to colleges and students by the month of March and the selection of students is based on their academic performances and interest. Based on the course, the syllabus and schedule will be prepared by the faculty coordinator and the list of faculty to teach the topics will be fixed. After successful completion of the course with a minimum 80% of attendance, the participants will be given certificates.

The focus of the summer school is not only teaching the content of the course, its aim is to encourage the students to know more on the topics with the real word applications and the research carried out on the topics. The topics were introduced during the summer school were keeping in mind a real-world necessity and the origin of the concept giving any student a research-oriented thought process. The problem solving sessions with minimal interference from the instructors allowing the student to follow individual paths to the solution and learning by themselves makes the summer school a great learning experience. The discussions also involve a great deal of sharing of individual research experience of the instructor as well as giving insight into research methodology and culture. The students are also encouraged to work on the existing open problems on the topics as well as find avenues of research of their own liking.

### **Evidence of Success:**

The summer school was greatly appreciated and very well received by the students. This can be seen from their feedback and academic performance. The number of undergraduate students applying for Maths research (UGRIP)/Maths project is significantly increasing and as an output a quality research publications from under graduate students is achieved. Also the number of students who join for PhD in Mathematics also significantly increased in these years.

### **Problems Encountered:**

- Since after the pandemic, there is a huge difference in the academic calendar of Colleges and Universities, getting participants from other institutions is a challenging one.
- Faculty working on their vacation time without any remuneration.
- Inability to do regular follow-up with the participants to guide them in their academics and research due to multiple reasons including time constraints, common meeting schedules.

### Resources Required/Future Plans:

- To collaborate with other departments to bring out interdisciplinary research.
- To collect Registration fee to provide basics requirement like food and accommodation.
- To identify and involve alumni/industry experts who work in the same domain to share their knowledge.

### Photos







