

ACADEMIC STAFF COLLEGE, CHRIST UNIVERSITY, BENGALURU

QUALITY IMPROVEMENT PROGRAMME OCTOBER 2016

“Research, Publications, Research Proposals”

DEPARTMENT OF MATHEMATICS

Date: 13, 14 & 15 October 2016

VENUE: Room No. 119, Block IV

QIP programme began with the welcome speech given by Dr Smita Nagouda. She welcomed the resource person Dr. Ganesh Subramanian, Associate Professor from Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore and all the members present.

Day 1: Session 1 (09:30 am - 11:00 am)

- Mr B Mahantesh presented his ongoing PhD work. The presentation was on Applications of nano and dust particles on heat flow problems over a stretching sheet. The observer and other members of faculty participated in the discussion in improving the scope of the research work.
- Ms Paradesi Tabitha Rajasekar, briefed about her research work on “The Breadth of a graph and its applications”. Suggestions were given on developing the algorithms on applications.

Day 1: Session 2 (11:15 am - 12:45 am)

- Ms Sameena Taranum, Research Scholar from Department of Mathematics, Christ University, presented the progress of her PhD work entitled “Study of triple diffusive convection in Non-Newtonian liquids”. Dr Ganesh Subramanian highlighted a different dimension of analysis of the same problem in order to validate the results before publications.

Day 1: Session 3, 4 (01:15 pm - 03:15 pm and 03:30 - 04:30)

- Dr Ganesh Subramanian presented on the topic “The orientation dynamics of internal spheroids - The Tumbling spinning hysteresis”. This topic relates to theoretical Suspension Rheology: (i) Stokesian suspensions of spherical particles and (ii) Suspensions of anisotropic particles (Spheroids). The overall discussion was focused on analyzing the spin of the suspended particles (prolate - sphere - oblate) using the flow pattern of the Jeffery orbit (one parameter family of spherical ellipses) obtained on a unit sphere. The talk was highly scientific and very informative. He also suggested to review the journals, open problems in specific subject area for enhanced research output.

Day -2

Day 2: Session 1 (09:30 am - 11:00 am)

Prof.T.V.Joseph started his talk on “Strategies for Research and Publications” with a wonderful motivational video on “The Gold Mine effect”. He stated that, to achieve a certain goal, we have to challenge all the obstacles and say NO to reasons. He pointed out that 10000 hours of efforts is required to achieve a particular goal. He had elaborated on the strategies to promote the research productivity. The strategies and assessment for the research productivity were discussed as follows:

- Strengthen research disciplines of the department by pairing faculty members with proven records and new faculty members in the respective areas.

The faculty pairing for strengthening the existing research disciplines were finalized as:

- Dr Mayamma Joseph, Dr Sangeetha Shathish (Graph Theory)
 - Dr Fr Joseph Varghese, Mrs Tabitha Rajashekar (Graph Theory)
 - Dr S Pranesh, Dr Sangeetha George, Dr T V Joseph (Fluid Mechanics)
 - Mr Mahathesh B (Fluid Mechanics, Boundary Layer Theory)
 - Dr Smita S N, Prof Gangadhar S K(Fluid Mechanics)
 - Dr Hari Baskar (Differential Geometry)
- Encourage faculty publications in quality journals.
Each faculty has to publish minimum one paper per semester in peer reviewed International Journals.
 - Encourage quality research proposal submission- Internal/External
At least once in a year from each area (Fluid Mechanics, Graph Theory and Reimannian Geometry), faculty members have to submit research proposal for internal/external funding.
 - Encourage faculty participation in multidisciplinary activities
It will be assessed through the number of papers presented at various conferences and invited talks delivered.
 - Provide reduced workload for faculty with high levels of research productivity
Workload for the two faculty members with high h-index (Dr S Pranesh and Mr Mahanthesh B) has been reduced, in order to enhance their research activities.
 - Appoint faculty members with proven records in different areas of research.
 - Provide one day free in every week to provide better ambience for research and training.
To provide better platform for research activities among the faculty members, every Wednesday's are made free from regular classes for research activities and training programs.
 - Encourage inter disciplinary research
Dr T V Joseph and Dr S Pranesh are the coordinators to set up Computational Fluid Dynamics lab to envisage the interdisciplinary research activities.
 - Organizing conferences and workshops.
To promote the research activities it was planned to organize a conference and workshop annually (in the month of February).

Committee	Faculty Incharge
-----------	------------------

“Conference on Graph Theory”	Dr Mayamma Joseph, Dr Fr Joseph Varghese and Dr Sangeetha Shathish
“Workshop on Fluid Mechanics”	Dr T V Joseph, Dr S Pranesh and Mr Mahanthesh B

It was also suggested to bring out the proceedings of the conference with ISBN number.

- Encourage students publications
It was decided to insist M Phil scholars to publish research paper in journals with better impact factor.
- Visibility of MPhil and PhD students in the campus and their assistance for departmental and research activities.
M Phil and Ph D scholars have to be present for two days per week in the department Research Center for proper monitoring of research work.
- Identification of Training Required (soft ware training, Leadership Training etc)
- Visit to top institutions
- Review of Journals and books
A committee was formed to review the articles/Journals and books based on research area.
Fluid mechanics - Dr Sangeetha George, Mr Mahanthesh B
Graph Theory –Dr Sangeetha Shathish and Ms Tabitha R
- Seminar by Faculty for Faculty
Presentations by faculty for faculty will be held once in two months.

Day 2: Session 2 (11:15 am - 12:45 am)

- Dr S Pranesh talked on general aspects of writing research paper and research ethics. According to him research work is not complete until results are published and understood. He explained the organization and writing of scientific paper with proper title, introduction, methodology, results and discussion (IMRAD) with the help of sample research articles. He concluded his talk with explanation on different reference styles.
- Dr Sangeetha George K gave a presentation on Minor research project entitled “Single and two component convective instability with time varying rotation in a couple stress fluid with saturated porous medium”.

Day 2: Session 3 (01:15 pm - 03:15 pm)

- Dr Hari Baskar delivered a talk on prospects of internal and external proposal. He emphasized the following:
 1. Mathematics research proposal should be accurate, specific, clear and logical.
 2. Research proposal should consist of title, abstract, a narration of work to be done, budget/ financial support required to complete the project and scope of the study.

Dr Hari Baskar suggested a multidisciplinary topic for writing a research proposal on “Stonehenge Mathematics”. An introduction to the existing literature on Stonehenge in England and India was given. Researchers in the field of Astronomy, Archeology and Mathematics can collaborate together to bring out more authentic correlation between mathematics and Stonehenge in India.

Day 2: Session 4 (03:30 - 04:30)

- Dr Sangeetha Shathish gave a draft research proposal on “Secured distance close domination in graph” while Mrs Tabitha Rajashekar gave research proposal on “Smart generic problem solver”. In the presentation, they said about the motivation behind the topic considered. They also explained different definitions and few literatures pertaining to the topic. They both suggested real life problems where the proposed topic can be applied.

Day 3: Session 1, 2 (09:30 am - 1:00 pm)

- Dr Smita S Nagouda presented a talk on “Enhancing research among UG students”. The challenges faced in promoting research at undergraduate level are (i) Quality of the students (ii) Strength of the class (iii) Mathematical competence (iv) Aptitude of the students. Research is promoted by taking up the following mathematical activities like Modelling, Experiments, Presentations and Writing articles. The students should be encouraged to form conjectures, to write algorithms and develop programming skills. The students should be given exposure to the latest research areas, their applications in fields like Biology, Physics and Astronomy. The students should be motivated by using the following strategies like giving positive feedback, creative assignments and exposure to research oriented careers. The students should be encouraged to interact with the faculty come up with their ideas, take up interdisciplinary projects and make publications by creating research ambience. Awareness is to be created on job profiles that require mathematics and the recruiting firms.
- Dr Mayamma Joseph gave an instructive training on Tex documentation. A thorough hands on training was given to prepare simple documents, research articles, reports, question papers and presentations (beamer) in Latex.

Day 3: Session 3 (02:15 pm – 03:15 pm)

- Compilation of the report of the three day activities was done and a final report was documented.
- Feedback for the QIP 2016 was taken.

Dr T V Joseph concluded the QIP by thanking all the faculty members for their sincere effort and active participation.