

## DEPARTMENT OF MATHEMATICS

### BASIC SCIENTIFIC RESEARCH - UGC

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- Utilization Pattern of the three Installments of BSR-Infrastructure Grant
- Further Installment Justification

- **Output of the Utilization of the items bought for three years under BSR Scheme**

The Natural Sciences have had a long symbiotic relationship with Mathematics. Mathematics Interventions have had a tremendous impact on Life Sciences also. So, Mathematics must reach out to the public particularly, in the modern context where, Mathematics has tremendous influence on every kind of human behaviour. To meet this demand, student should be geared to encourage and nurture good talents in Mathematics. The fund given by BSR is providing the additional impetus to the study of Mathematics in our institution.

#### 2007 – 2008

##### 1. LCD

- ◆ ICT enabled Teaching is facilitated.
- ◆ Students take Seminar using PowerPoint Presentation through LCD.
- ◆ Guest Lecture arranged in emerging areas of Mathematics utilize LCD facility.
- ◆ To motivate other staff to undertake more Minor/Major Research Projects, Minor/Major Research Projects that are ongoing are presented through LCD.

##### 2. **Steel Almirahs:** Department documents are stored

##### 3. **One Computer and One Laser Printer**

Computer and Laser Printer are utilized by the department staff for the academic activities such as typing syllabus and question papers etc.,

##### 4. **Microprocessor Kits**

Students understand the abstract concepts in depth by having hands on experience through practicals using Microprocessor Kits.

##### 5. **Mathematical Package – Maple**

- ◆ Through Maple, a visual model, students understand the abstract Mathematical concepts in-depth.

- ◆ Maple is used to solve complex problems in various papers of Mathematics.
- ◆ Students use Maple to do their projects.

## 2008 – 2009

### **1. Laptops**

- ◆ For Computer papers such as, C and C++, practicals are conducted using Laptops.
- ◆ Students use Laptops to do their projects.
- ◆ By using Laptops, students become familiar with more computer applications that help them to pursue higher studies.

### **2. Digital Camera:**

- ◆ All academic activities are documented with the help of camera.
- ◆ Students are trained to take photographs during Seminars / Conferences, which kindle their interest in photograph.

### **3. Steel Almirahs: Department documents are stored.**

### **4. Revolving Chair: Used by the department staff.**

## 2009 – 2010

### **1. Scanner**

- ◆ Diagrams downloaded from Internet are scanned and used for student's project work.
- ◆ Photographs of the Department Activities are scanned using the Scanner for the Documentation purpose.

### **2. Computers**

- ◆ Students are given individual attention in practical classes because of the availability of more number of Computers.
- ◆ Utilizing these computers, students are able to finish their projects on time.

## **Projects done by the students using Laptops and Computers**

1. Fuzzy Mathematics.
2. Some Applications of Chi-Square distribution and t- Distributions.
3. Differential Equations.
4. Graph Theory.
5. Integer Programming Problem.

6. Fundamentals of Number Theory.
7. Estimation.
8. Lebesgue Measure and Integration.
9. Multiple Correlation and Regression.
10. Solution of L.P.P by Dynamic Programming.
11. Studies in Algebraic Structures.
12. Basics of Quadratic Residues and Quadratic Reciprocity.
13. Continuous Functions in Topological spaces.
14. Applications of Graph Theory.
15. Crossing number of a graph.
16. A study on probability and stochastic processes.

- **Output in the form of projects and research publication by the Department**

*DR. S. ROSE MARY PAPER PUBLICATIONS*

S. No.	Title	Journal Name	Month/ Year	Vol. No.	Issue No.	Publisher	Place
1.	REMARKS ON ALMOST $\alpha$ -CLOSED FUNCTIONS	SOUTH EAST ASIAN JOURNAL OF MATHEMATICS AND MATHEMATICAL SCIENCES.	JUNE, 2006	5	1	SUNSHINE PUBLICATION	INDIA
2.	$\alpha$ -CLOSED SETS IN TOPOLOGICAL SPACES.	ASSUIT UNIVERSITY JOURNAL OF MATHEMATICS AND COMPUTER SCIENCE.	JUNE, 2007	36	1	FACULTY OF SCIENCE, ASSUIT UNIVERSITY	EGYPT
3.	REMARKS ON $\alpha$ -HOMEOMORPHISMS	MATHEMATICA MACEDONICA JOURNAL	2009	7		MACEDONIA PUBLISHERS	MACEDONIA
4.	ON CONTRA - $\alpha$ -QUOTIENT FUNCTIONS	INTERNATIONAL JOURNAL OF ENGINEERING, COMPUTER SCIENCE AND MATHEMATICS	JAN. - JUNE 2010	1	1	SERIALS PUBLICATIONS	INDIA
5.	STRONGER FORMS OF $\alpha$ -CONTINUOUS	INTERNATIONAL JOURNAL OF ENGINEERING,	JAN. - JUNE 2010	1	1	SERIALS PUBLICATIONS	INDIA

	FUNCTIONS	COMPUTER SCIENCE AND MATHEMATICS					
6.	REMARKS ON CONTRA - $\alpha\hat{g}$ - CONTINUOUS FUNCTIONS	INTERNATIONAL JOURNAL OF MATHEMATICS, GAME THEORY AND ALGEBRA.	2011	20	2	NOVA SCIENCE PUBLISHERS	USA
7.	DECOMPOSITIONS OF $(1,2)^* \alpha$ - CONTINUOUS FUNCTION IN BITOPOLOGICAL SPACES	INTERNATIONAL JOURNAL OF MATHEMATICS GAME THEORY AND ALGEBRA.	2011	20	2	NOVA SCIENCE PUBLISHERS	USA
8.	STRONGER FORM OF $\alpha\hat{g}$ - CLOSED MAPPINGS	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON MATHEMATICS AND COMPUTER SCIENCE	2010	-	-	G.K.PUBLISHER, CHENNAI	LOYOLA COLLEGE CHENNAI
9.	BITOPOLOGICAL VIEW OF $\alpha\hat{g}$ - CONTINUITY	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON MATHEMATICS AND COMPUTER SCIENCE	2011	-	-	SAKTHI PUBLISHERS, CHENNAI	LOYOLA COLLEGE CHENNAI
10	BITOPOLOGICAL CONTINUOUS FUNCTIONS IN A NEW FORM	PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON MATHEMATICS IN ENGINEERING & BUSINESS MANAGEMENT	2012	-	-	T.R. PUBLICATION PVT. LTD. CHENNAI	STELLA MARIS COLLEGE, CHENNAI

**MINOR RESEARCH PROJECT UNDERTAKEN :**

S. No.	Title of Project	Principal Investigator	Sponsored By	Period	Sanctioned Amount in (₹)
1.	BITOPOLOGICAL VIEW OF WEAKLY CONTINUOUS FUNCTIONS	DR. MRS. S. ROSE MARY	UGC	13.8.2010 - 12.2.2012	50000