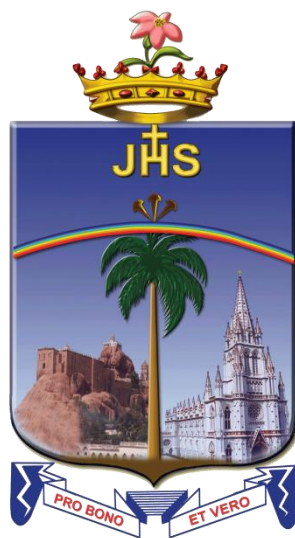


# **FIST REPORT (PHASE - I)**



**DEPARTMENT OF MATHEMATICS**  
**St. JOSEPH'S COLLEGE (AUTONOMOUS)**  
*Nationally Accredited at 'A' Grade (3<sup>rd</sup> Cycle) by NAAC*  
*College with Potential for Excellence by UGC*  
**TIRUCHIRAPPALLI – 620 002, TN**

**PROFORMA FOR REPORT FOR UTILIZATION OF FIST SUPPORT**

- 1 Name of Department and University : **Mathematics**  
**St Joseph's College (Autonomous)**  
**Tiruchirappalli – 620 002.**  
  
**Bharathidasan University**  
**Tiruchirappalli – 620 002.**
2. Address for communication (Name : **Prof. Dr. S Rubanraj**  
and address of the Head of the **Head, Department of Mathematics**  
Department with e-mail and Telephone **St. Joseph's College, Tiruchirappalli – 2.**  
Telephone number) **[ruban946@gmail.com](mailto:ruban946@gmail.com)**  
**+91-9443371123**
3. Date and Ref. No. of DST Sanction : **SR/FST/MSI-062/2008**  
letter

4. Details of the Grants

<b>Budget Heads</b>	<b>Amount Sanctioned with Date</b>	<b>Amount Received with Date</b>
a. Equipment & Networking	Rs. 10,00,000 on 22.06.2009	Rs. 7,50,000 on 13.10.2009
b. Infrastructure	Rs. 6,00,000 on 22.06.2009	Rs. 4,00,000 on 13-10-2009
c. Maintenance	Rs. 1,50,000 on 22.06.2009	---
d. Total	Rs. 17,50,000 on 22.06.2009	Rs. 11,50,000 on 13.10.2009

5. Equipment ordered/purchased/installed

<b>S. No.</b>	<b>Name (with Model and Make)</b>	<b>Order Date</b>	<b>Installation Date</b>	<b>Cost in INR</b>
1	SONY LCD Projector	03/12/2009	18/12/2009	46,500
2	Canon Xerox Machine	16/12/2009	18/12/2009	98,800
3	Server & 15 PCs	04/12/2009 20/01/2010	17/12/2009	604,000
4	Infrastructure work	29/12/2009	27/01/2010	120,438
5	Laser Printer	18/01/2010	15/04/2010	6,500
6	Consul UPS		11/08/2010	132,832
7	Steel Cupboard	14/02/2010	15/02/2010	8,550
8	Printer, Cartridge	13/02/2010	16/02/2010	10,160
9	Acer PCs – 4 Nos.	07/03/2011	07/03/2011	87,200
10.	1 No. of ibau Stereo Desktop Speakers-S/N:(10558AS10747)	13/09/2011	16/09/2011	525
<b>Total:</b>				<b>1,115,505</b>

**(Rupees Ten lakhs Twenty Seven thousand Seven hundred and Eighty only)**

## Books and Journals

S.No.	Bill No. & Date	Vr.No. & Date	Nature Expenses	Amount Rs.
1	01.02.2010	539162	Books	16,709
2	01.02.2010	539163	Books	3,015
3	09.02.2010	539164	Books	3,667
4	09.02.2010	539165	Books	3,572
5	09.02.2010	539166	Books	14,918
6	15.03.2010	539167	Books	6,545
<b>Total :</b>				<b>48,426</b>

**(Rupees Forty Eight thousand Four hundred and Thirty Two only)**

### 6. Details of infrastructure developed:

A well lit computer laboratory with one Intel Server, 15 Lenovo Computers, a 10 KVA Consul UPS with half an hour back up and Laser Printers was setup. A classroom was converted into audio visual room with LCD projector, screen and audio provisions. A networking Canon copier was installed in the computer lab for preparing the study material. A networking was established to teach the students effectively.

### 7. Details of Networking:

A computing facility with 15 Lenovo Computers networked to the Intel Xenon server has been established. It is provided with a 10 KVA Online UPS with half an hour back up and Laser Printers, LCD Projectors, Computer accessible Copier and 128KBPS leased line internet facility to all computer systems were established.

### 8. Utilization of the facilities created under FIST support:

#### a) For Teaching:

Making use of the facilities set up under FIST support and taking advantage of the freedom granted by our autonomous status by the UGC, the department has introduced two new topics namely MATLAB and LATEX for M Phil students. MATLAB was introduced as a skill based elective paper open to all second year UG students.

#### b) For research:

M.Phil. students are encouraged to prepare their project dissertations in the computer lab. PhD Research Scholars are using the mathematical software to solve their research problems.

### 9. Details of Research Paper Publications (2009 – 2011) by the Faculty of Mathematics Paper Publications (2009-2010)

L. Benedict Michael Raj

Dominating colour transversal number for trees and their bounds, Indian journal of mathematics and mathematical sciences, vol.5, 243-246, 2009.

Chromatic Transversal Domination Number of Graphs. International Mathematical Forum ISSN 1312-7594. Vol.513-16, 2010.

Chromatic Transversal Domination in Graphs International Journal of Combinatorial Mathematics and combinatorial Computing. ISSN 0835-3026. Vol 7533-402010

U.Karuppiah

Best Proximity for KKM0-multimaps, Far-east Journal of Mathematical Sciences (FJMS), Vol.No.pp. 49-68, 2010.

J. Umamaheswari

Fuzzy *Detour  $\mu$ - Distance in Fuzzy Graphs*", Proceedings of the International Conference on Mathematical Methods And Computations, Allied Publications, Jamal Mohamed College, Trichy, Tamil Nadu, India, , Pp 184-187, 24-25th July 2009.

*Relational Properties of Fuzzy Detour  $\mu$  -Distance in Fuzzy Graphs*, Proceedings of the National Conference on Advances in Mathematics; Scientific Development And Engineering Applications, Narosa Publications, Kunthavai Naachiyar Govt. Arts College For Women (Autonomous), Thanjavur-17, pp 366-371, Sep 2009.

Fuzzy Detour  $\mu$ -Centre in Fuzzy Graphs, International Journal of Algorithms, Computing and Mathematics (IJACM) , Vol. 3, No2, pp 57-63 May 2010.

A. Anthony Eldred

On Common Best Proximity Pair Theorems, Acta Sci. Math.(Szeged) 75, 707-721, 2009.

On the equivalence of the Mizoguchi–Takahashi fixed point theorem to Nadler's theorem Applied Mathematics Letters, Volume 22, Issue 10, Pages 1539-1542, October 2009.

Paper Publications (2010-2011)

U.Karuppiah

Best Proximity point theorems for cyclic Contraction mappings on uniformly convex and reflexive Banach spaces International Journal Of Mathematical, Science and Engineering Applications (IJMSEA), Vol.5,No.1 327-336,2011.

Common fixed point theorems for the non-self mappings in metrically convex spaces, International journal Of Mathematical Sciences and Engineering Applications (IJMSEA), Vol. 5, No.2, pp.405-421, 2011.

Common fixed point for sequence of mappings under contractive Conditions, Bharathidasan University Journal of Science and Technology, 2011.

Best Proximity Point results in Quasimetric spaces, International Journal of Mathematical Sciences and Applications, Sep 2011.

J. Umamaheswari

Fuzzy Detour as a Hamiltonian Path in Fuzzy Graphs, International Journal of Maths Science and Engineering Applications(IJMSEA), ISSN-0973-9424, vol.5,No II, pp 161-166, March 2011.

Fuzzy Detour Boundary Vertices in Fuzzy Graphs, International Journal of Contemp. Math. Sciences (IJCMS), vol.6, No.35, pp 1725-1731, 2011.

J Maria Joseph

Some Fixed point Theorems in Ordered and Property P in G- metric Spaces. International J. of Math.Sci. & Engg. Appls. Vol. 5, PageNo : 229-243. ISSN:0973-9424, 2011.

P. Lawrence Rozario Raj

Cordial labeling for the splitting graph of some standard graphs, International Journal of Mathematics and Soft Computing, Vol.1, No.1, 105 – 114, 2011.

Paper Presented (2009-2010)

J. Umamaheswari

Fuzzy Detour  $\mu$ - Distance in Fuzzy Graphs, International Conference On Mathematical Methods And Computations, Jamal Mohamed College, Trichy, Tamil Nadu, India, 24-25 July 2009.

*Relational Properties of Fuzzy Detour  $\mu$ -Distance in Fuzzy Graphs*, National Conference on Advances in Mathematics; Scientific Development And Engineering Applications, Kunthavai Naachiyar Govt. Arts College For Women (Autonomous), Thanjavur-17, Sep 2009.

On Some Aspect Of Fuzzy Detour  $\mu$ -Distance in Fuzzy Graphs, National Symposium On Mathematical Methods And Applications (NSMMA 2009) , IIT, Madras, Tamil Nadu, India, 22<sup>nd</sup> Dec 2009.

Paper Presented (2010-2011)

J Maria Joseph

Results on the Existence and Convergence of best Proximity Points, National Conference on Non – linear Functional Analysis, Manonmaniam Sundaranar University. Tirunelveli, 03-05/03/2011.

10. Sponsored research projects in operation during the period under report

Nil

11. Utilization of Equipment from outside the department

No. As such no external scholars are permitted to use the equipments purchased under the Grant received from FIST.

12. Self-Assessment of the Impact of FIST support:

a) Taking advantage of the computer facilities established, the following new courses were introduced in the Post Graduate and M.Phil classes.

New Class-Room Experiments:

A course in MATLAB is offered for the M.Phil Scholars.

A course in LATEX is offered for the M.Phil Scholars.

A Course in C is offered as a paper for Under Graduate Students.

b) While our students fare well at various entrance examinations and also get appointments at prestigious institutions, efforts are taken to see them through NET, SLET, UGC and GATE exams.

- c) Now three of our staff member has completed his doctorate degree and four others are currently pursuing their research, we hope they and others will take up new projects.
- d) The newly created facility has helped us to a betterment of quality of research publications in our department particularly in the field of Fuzzy Automata, Graph theory, Fixed Point Theory, Operarions Research and Mathematical Modelling.

13. Is any problem faced in utilization of the grant / facilities?

We face no difficulties to utilize the funds in the best interests of the department subject to the norms of DST-FIST.

Late release of money has lead us to lot of struggle in ordering the equipment as proposed in the submitted projects.

Purchase of the same brand and same specifications has to be modified due to delay of sanctioning money.

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