



DEPARTMENT OF MATHEMATICS – UG

VIJAYA COLLEGE

1.	Name of the department	MATHEMATICS - UG
2.	Year of Establishment	1945
3.	Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)	B.Sc. : PCM, PMCs, MES, PME, MECs, SMCs
4.	Names of Interdisciplinary courses and the departments/units involved	NIL
5.	Annual/ semester/choice based credit system (programme wise)	Semester System : Prior to 2014 – 15 Choice Based Credit system: 2014 – 15 onwards
6.	Participation of the department in the courses offered by other departments	NIL
7.	Courses in collaboration with other universities, industries, foreign institutions, etc.	NIL
8.	Details of courses/programmes discontinued (if any) with reasons	NIL
9.	Number of teaching posts	
	Designation	Sanctioned
	Professors	NIL
	Associate Professors	2
	Asst. Professors	6
	Filled	
	NIL	NIL
	2	2
	6	6



10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	Experience
Dr. D. Radhakrishna	M.Sc; M.Phil; Ph.D	Associate Professor	MHD and Th. Of Elasticity	27 Years
Dr. M. S. Nagashree	M.Sc; M.Phil; Ph.D	Associate Professor	Incompressible viscous flow and Computer programming	27 Years
Dr. S.B. Sathyanarayana	M.Sc; M I E; M.Phil; Ph.D	Assistant Professor	MHD and Th. Of Elasticity	26 Years
Smt. P. Latha	M.Sc; M.Phil;	Assistant Professor	MHD and Th. Of Elasticity	23 Years
Smt. V.R. Vanitha	M.Sc; M.Phil;	Assistant Professor	Number Theory and Functional Analysis	22 Years
Smt. H.D. Hema	M.Sc; M.Phil;	Assistant Professor	MHD and Theory of Elasticity	18 Years
Smt. M. Sheela	M.Sc; M.Phil;	Assistant Professor	MHD and Theory of Elasticity	17 Years
Smt. N. Sudha	M.Sc; M.Phil;	Assistant Professor	Rheology and non-newtonian fluids	18 Years

11.	List of senior visiting faculty	NIL
12.	Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty	NIL
13.	Student -Teacher Ratio (programme wise)	84 : 1
14.	Number of academic support staff	Sanctioned
		Filled
		NIL
		NIL



15.	Qualifications of teaching faculty with D Sc/ D.Litt. / Ph.D. / MPhil / PG	Ph.D	03
		M.Phil.	05
16.	Number of faculty with ongoing projects from	01	
	National Funding Agency	01	
	International Funding Agency	NIL	
	Grants Received	Rs. 60,000=00	
	Title of the Project : Some Analytical and Numerical Solutions of Boundary Layer Equations For Simple Flows		
17.	Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received.	NIL	
18.	Research Centre /facility recognized by the University	NIL	
19.	Publications		
	Publication per faculty	0.625	
	Number of papers published in peer reviewed journals	05	
	National Journals	00	
	International Journals	05	
	Books Edited	NIL	
	Books Edited with ISBN Numbers	NIL	
	Impact factor	2.1	
	h – index	2	



Paper Publications in Peer reviewed Journals

a. International Journal Paper Publications

Sl. No.	Name of the Faculty	TITLE OF THE PAPER	JOURNAL	Year	IMPACT FACTOR	CITATIONS
1	Dr. S.B. Sathyanarayana	Approximate analytical Solution of compressible Boundary layer flow with an adverse pressure gradient by homotopy analysis method	Journal of applied Mathematics and Bioinformatics	2014		
2	Dr. D. Radhakrishna	“Linear and nonlinear electroconvection under AC electric field”	<i>Communications in Nonlinear Science and Numerical Simulation</i>	2012	2.67	6
3	Dr. S.B. Sathyanarayana	Homotopy Analysis Method For Nonlinear Boundary Value Problem	JP Journal of Applied Mathematics	2012		
4	Dr. M.S. Nagashree	The onset of electrothermoconvection in a rotating Brinkman porous layer	International Journal of Engineering Science	2011	2.212	3
5	Dr. S.B. Sathyanarayana	Homotopy Analysis Method for Flow over Nonlinearly Stretching Sheet with Magnetic Field	Journal of Applied Mathematics and Fluid Mechanics	2011	1.4	

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b. National Journal Paper Publications

NIL



20.	Areas of consultancy and income generated	
	<p>Dr. S. B. Sathyanarayana is a consultant for Mathematica and LaTeX for the Research Scholars in the Research Centre in Applied Mathematics, M. E. S. College of Arts, Commerce and Science, Bengaluru. Income generated : NIL</p>	
21.	Faculty as members in	
	a. National Committees	NIL
	b. International Committees	NIL
	c. Editorial Boards	01
	<p>Dr. D Radhakrishna, Referee, INTERNATIONAL JOURNAL OF PHARMACEUTICAL AND BIOLOGICAL ARCHIVE</p>	
22.	Student projects	
	a) Percentage of students who have done in-house projects including inter departmental/programme	NIL
	b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies	NIL
23.	Awards / Recognitions received by faculty and students	
	<p>Dr. D Radhakrishna, Member, Board of Studies The Apex Professional University, Pasighat, Arunachal Pradesh, India</p>	
	<p>Life Member, National and International Institutions</p>	
	Dr. S. B. Sathyanarayana	Institution of Engineers (India). Calcutta



	Dr. S. B. Sathyanarayana	Indian Society Of Theoretical and Applied Mechanics (ISTAM). Indian Institute of Technology Kharagpur
	Vanitha V. R.	Indian Society Of Theoretical and Applied Mechanics (ISTAM). Indian Institute of Technology Kharagpur
	Dr. S. B. Sathyanarayana Awarded III prize for the paper “ Homotopy Analysis Method of A Boundary Layer Problem ” at National Conference on EMERGING TRENDS IN INFORMATION TECHNOLOGY AND MATHEMATICS (ETITM 2011) at East West Institute of Technology , Bangalore, India during November 3 – 4 , 2011	
24.	List of eminent academicians and scientists / visitors to the department	
a.	Dr.Vittal Rao	Professor, Dept. of Mathematics, Indian institute of Science, Bangalore
b.	Dr.Pradeep Siddheshwar	Professor and Chairman, Dept. of Mathematics, Bangalore University, Bangalore
c.	Dr. S. Balachandra Rao	Hon. Director, Bharatiya Vidya Bhavan’s Gandhi Centre of Science and Human Values, Bengaluru-560001
d.	Dr. Shankar, Professor	The Institute of Mathematical Sciences, Chennai
e.	Dr. B. R. Nagaraju	Professor Emiritus, TIFR, Bengaluru
25.	Seminars/ Conferences/Workshops organized & the source of funding	NIL

a. Conferences Attended by Faculty

i. International Conferences

Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)	Title of the paper presented
1	Dr. S. B. Sathyanarayana	Mathematical Modelling And Applications To Industrial Problems	March 28-31, 2011	National Institute of Technology Calicut, Kerala, India.	Strong Approximate Analytic Solution Of A Boundary Layer Problem



Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)	Title of the paper presented
		(MMIP2011)			
2	Dr. S. B. Sathyanarayana	International Conference on Fluid Mechanics & Graph Theory , ICFGD 2012	16 th and 18 th August, 2012	Christ University, Bangalore	
3	Dr. S. B. Sathyanarayana	57th Congress of ISTAM (An International Meet)	17 th - 20 th December, 2012	Defence Institute of Advanced Technology, Pune.	Approximate Analytical Solution For Compressible Boundary Layer Problem
4	V R Vanitha	International Conference on Fluid Mechanics & Graph Theory , ICFGD 2012	16 th and 18 th August, 2012	Christ University, Bangalore	
5	Dr. S. B. Sathyanarayana	International symposium ISSAM 2014 on Advances in Applied Mathematics	18 th January 2014.	MES College, Malleswaram, Bangalore	
6	Dr. D. Radhakrishna	59th Congress of ISTAM (An International Meet)	17 th - 20 th December, 2014	Alliance University, Bangalore	Electroconvection in presence of AC Electric field
7	Dr. S. B. Sathyanarayana	59th Congress of ISTAM (An International Meet)	17 th - 20 th December, 2014	Alliance University, Bangalore	Unsteady MHD two dimensional Boundary layer stagnation point flow on a stretching flat sheet



ii. National Conferences

Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)	Title of the paper presented
1	Dr. D. Radhakrishna	Emerging Trends in Fluid Mechanics and Graph theory	11 & 12 February 2011	Christ University, Bangalore	
2	Dr. S. B. Sathyanarayana	Emerging Trends in Fluid Mechanics and Graph theory	11 & 12 February 2011	Christ University, Bangalore	A New Analytical Solution to Boundary Layer Problem
3	Dr. D. Radhakrishna	Emerging Trends in Fluid Mechanics and Graph theory	11 & 12 February 2011	Christ University, Bangalore	
4	Dr. M S Nagashree	Frontiers in Applied Mathematics	9 th and 10 th March 2012	MES College, Malleswaram, Bangalore	
5	Dr. M S Nagashree	The Importance of Discrete Mathematics in Mathematics and Computer Science	13 th – 14 th March, 2012	Maharani's Science College for Women, Bangalore	
6	Dr. S. B. Sathyanarayana	National level workshop on Scilab	8 – 9 September 2011	Govt Science College, Bangalore	
7	Dr. S. B. Sathyanarayana	Emerging Trends In Information Technology And Mathematics (ETITM2011)	November 3 – 4, 2011	East West Institute of Technology, Bangalore, India	Homotopy Analysis Method of A Boundary Layer Problem
8	Dr. S. B. Sathyanarayana	The Importance of Discrete Mathematics in Mathematics and Computer Science	13 th – 14 th March, 2012	Maharani's Science College for Women, Bangalore	
9	P Latha	Frontiers in Applied Mathematics	9 th and 10 th March 2012	MES College, Malleswaram, Bangalore	
10	V R Vanitha	PDE and its Applications	19 th and 20 th August 2011	GovindramSeksaria Science College, Tilakwadi, Belgaum.	

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Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)	Title of the paper presented
11	V R Vanitha	National level workshop on Scilab	8 – 9 September 2011	Govt Science College, Bangalore	
12	V R Vanitha	Frontiers in Applied Mathematics	9 th and 10 th March 2012	MES College, Malleswaram, Bangalore	
13	Dr. D. Radhakrishna	Mathematical modelling applied to physical & natural sciences	30 th July 2012	MES College, Malleswaram, Bangalore	
14	Dr. M S Nagashree	Mathematical modelling applied to physical & natural sciences	30 th July 2012	MES College, Malleswaram, Bangalore	
15	Dr. S. B. Sathyanarayana	DOCAM 2012	May 18 – 19, 2012	East West Institute of Technology , Bangalore, India	Boundary Layer Problem in MHD And Sink Flow
16	V R Vanitha	Shulba Sutras And Mathematics	1 st and 2 nd sept 2012	Bharatiya Vidya Bhavan, Bangalore.	
17	Dr. S. B. Sathyanarayana	Emerging Trends In Advanced Mathematics	6 th and 7 th February, 2014	Jyothi Nivas College, Bangalore	

iii. State Level Conferences

Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)
1	Dr. S. B. Sathyanarayana	Fourier Transforms And Its Applications	9th Oct 2010	Al-Ameen Arts, Science & Commerce College, Bangalore
2	Dr. S. B. Sathyanarayana	Theories in Mathematics	3rd Feb 2011	MES College Malleswaram, Bangalore



Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)
3	V R Vanitha	Life and works of Srinivas Ramanujam	15th March 2012	National Degree College, Bengaluru
4	Dr. D. Radhakrishna	Life and works of Srinivas Ramanujam	15th March 2012	National Degree College, Bengaluru
5	Dr. M S Nagashree	Life and works of SrinivasRamanujam	15th March 2012	National Degree College, Bengaluru
6	Dr. S. B. Sathyanarayana	Seminar in honour of Prof H. S. Sharadamma	5th Sept 2011	MES College Malleswaram, Bangalore 560003
7	Dr. S. B. Sathyanarayana	Life and works of SrinivasRamanujam	15th March 2012	National Degree College, Bengaluru
8	Dr. D. Radhakrishna	Open Lecture Series in Basic Science -2013	13th March 2013	Visveswarapura college of science, Bangalore
9	Dr. D. Radhakrishna	Mathematical Modelling	20th July 2013	Central college Bangalore
10	Dr. D. Radhakrishna	Open Lecture Series in Basic Science - Excursions In Mathematics	27th, 28th Dec 2013	Jain University, Bangalore
11	Dr. S. B. Sathyanarayana	KSTA Conference	20th, 21st Dec 2013	Christ University, Hosur Road, Bangalore
12	Dr. S. B. Sathyanarayana	Open Lecture Series in Basic Science - Excursions In Mathematics	27th, 28th Dec 2013	Jain University, Bangalore
13	Dr. D. Radhakrishna	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women



Sl. No.	Name of the faculty	Title of the Workshop/ Seminar/ Conference	Date	Organized by (Name of the institution or university)
14	Dr. M. S. Nagashree	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
15	Dr. S. B. Sathyanarayana	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
16	Latha. P	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
17	Vanitha. V. R	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
18	D. Hema	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
19	Sheela. M	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women
20	Sudha. N	Workshop on Scilab and Maxima(FOSS)	9 th – 10 th January 2015	Maharani Lakshmi Ammanni College for women

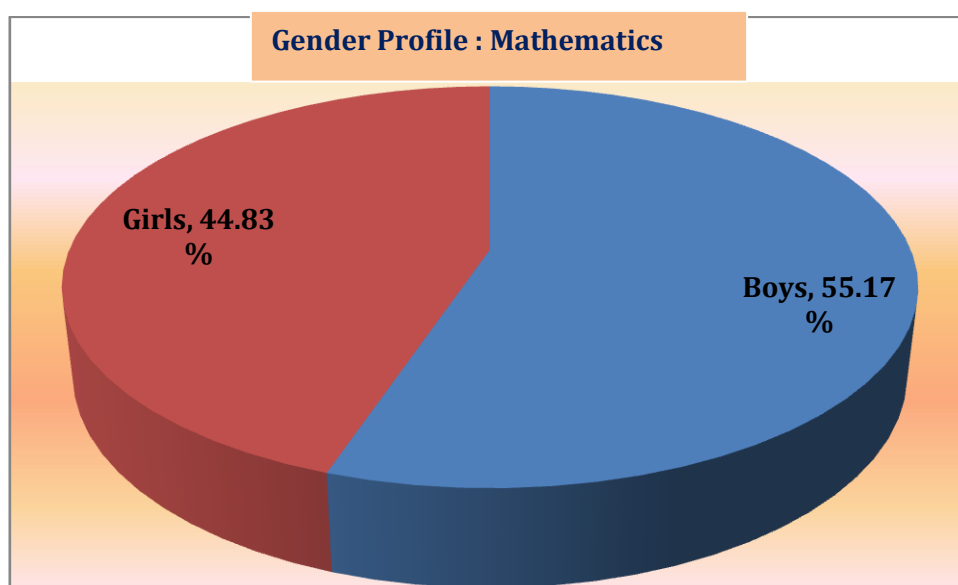
26. Student profile programme/course wise:

Year	Name of the Course / Programme	Applications Received	Selected	Enrolled in I Year		TOTAL All Years	Pass Percentage (outgoing students)
				Male	Female		
2010 - 11	B.Sc.	241	241	132	109	634	67.11%
2011 - 12		177	177	88	89	678	64.96%
2012 - 13		164	164	107	57	551	68.51%
2013 - 14		237	237	140	97	549	68.09%
2014 - 15		220	220	109	111	620	



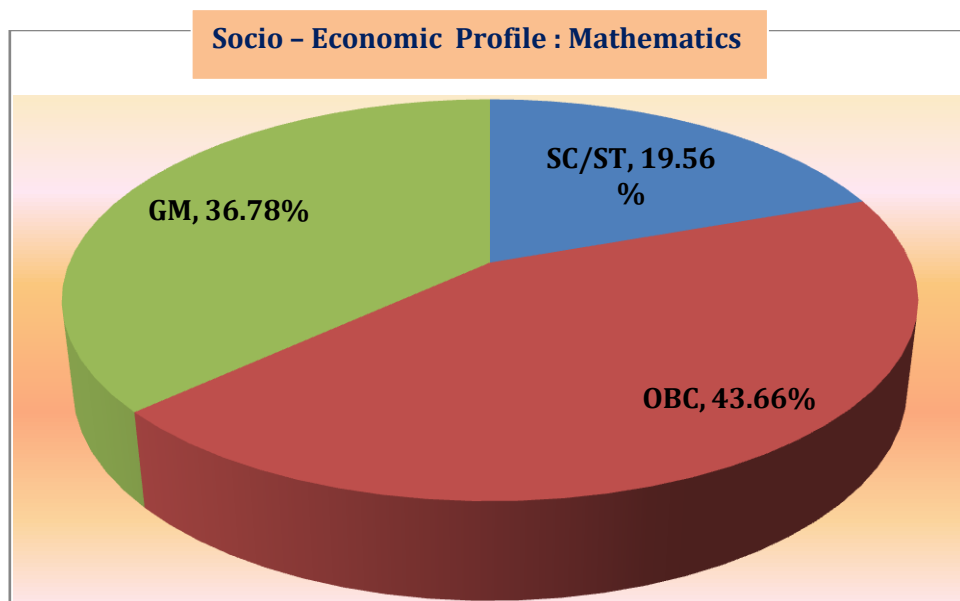
Gender Profile of Students

Academic Year	Boys	Girls	Total
2011 - 12	347	331	678
2012 - 13	307	244	551
2013 - 14	318	231	549
2014 - 15	351	269	620
Average Percentage	55.17%	44.83%	



Socio - economic profile of students

Academic Year	SC/ST	OBC	GM	Total
2011 - 12	116	243	319	678
2012 - 13	106	238	207	551
2013 - 14	114	267	168	549
2014 - 15	133	299	188	620
Average Percentage	19.56%	43.66%	36.78%	



27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
B.Sc	98%	2%	Nil

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

One student – NET and GATE

One Student - Defence Services

1. **Abhishek Bharadwaj**, cleared **NET** during Dec.2012, secured 0018/0158 rank in Mathematical sciences under CISR fellowship scheme.
2. **Abhishek Bharadwaj**, cleared **GATE** in Mathematics: Score 735; Validity : 15 March 2014 to 14 March 2015 with Reg. Number 16351101
3. **Vivek Ram** of 2010 – 2013 Batch B. Sc student of Computer Science has been appointed as Lieutenant, 52, Bengal regiment, West Bengal sappers during October 2014 on having passed **Combined Defence Services Examination**.



29. Student progression

Student progression	Against % enrolled			
	Year	No. enrolled	Total No.	%age
UG to PG	2010 - 11	16	192	8.33%
	2011 - 12	19	263	7.22%
	2012 - 13	12	301	3.98%
	2013 - 14	16	175	9.14%
	Average	16	233	7.2%
	PG to M.Phil.	NA		
PG to Ph.D.	NA			
Ph.D. to Post-Doctoral	NA			
Employed	Data provided under student support services from placement cell			
• Campus selection				
• Other than campus recruitment	Data Not Available			
Entrepreneurship/Self-employment	NIL			

30.	Details of Infrastructural facilities	
a.	LIBRARY	
	Books Main Library	7488 Books
	Department Library	220 Books
b.	Internet facilities for Staff & Students	Available with 02 computers in the department staff room
c.	Class rooms with ICT facility	05 Class rooms



d.	Laboratories	NIL
31.	Number of students receiving financial assistance from college, university, Government or other agencies	Data furnished under student support services
32.	Details of Student Enrichment Programmes	NIL

33. Teaching methods adopted to improve student learning

- ❖ Chalk and talk method
- ❖ PPT Presentations
- ❖ Question bank / Assignment
- ❖ Problem working classes
- ❖ Remedial class
- ❖ Extra coaching for students involved in Sports, cultural, NCC, NSS and Co – Curricular activities
- ❖ Lecture Notes

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

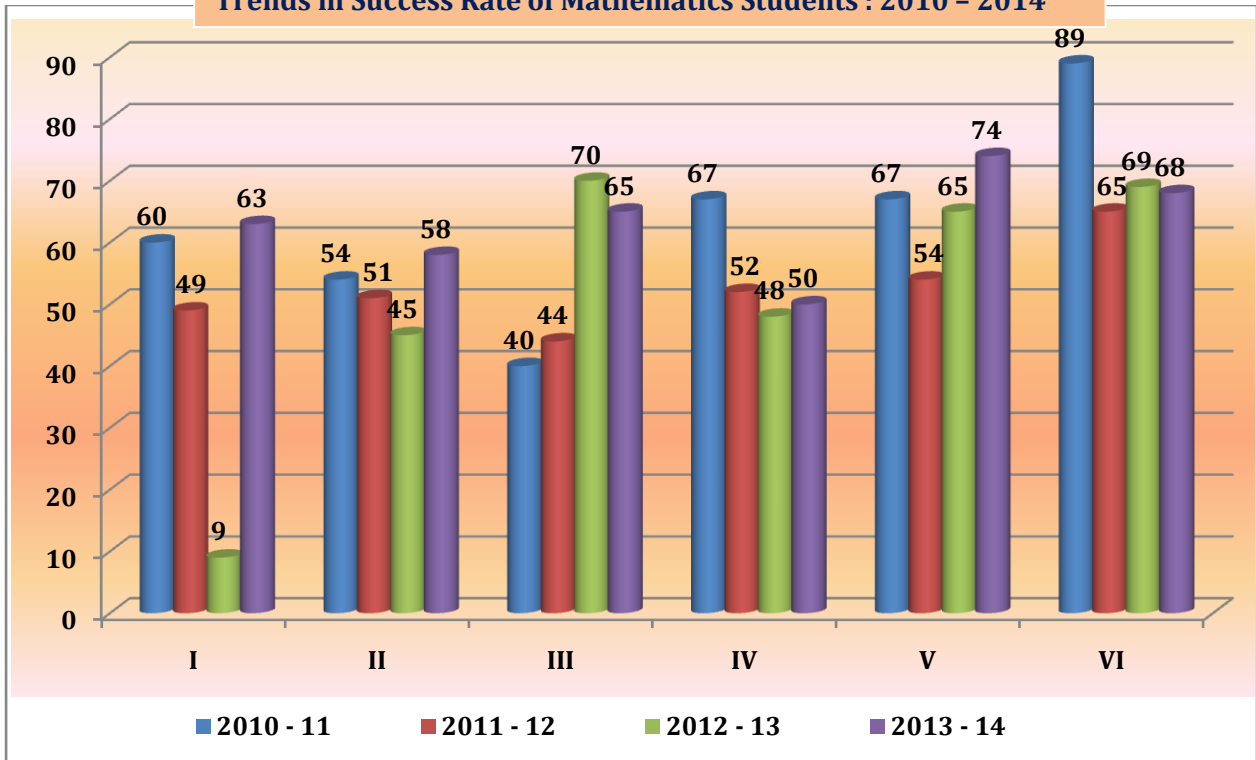
Participation in environment awareness programmes and ecological importance values. Participation in NSS and NCC programmes. Participation in national festivals.

I. Trends in the Success Rate of Mathematics Students : 2010 – 2014

Sem	2010 - 11	2011 - 12	2012 - 13	2013 - 14
I	60	49	9	63
II	54	51	45	58
III	40	44	70	65
IV	67	52	48	50
V	67	54	65	74
VI	89	65	69	68



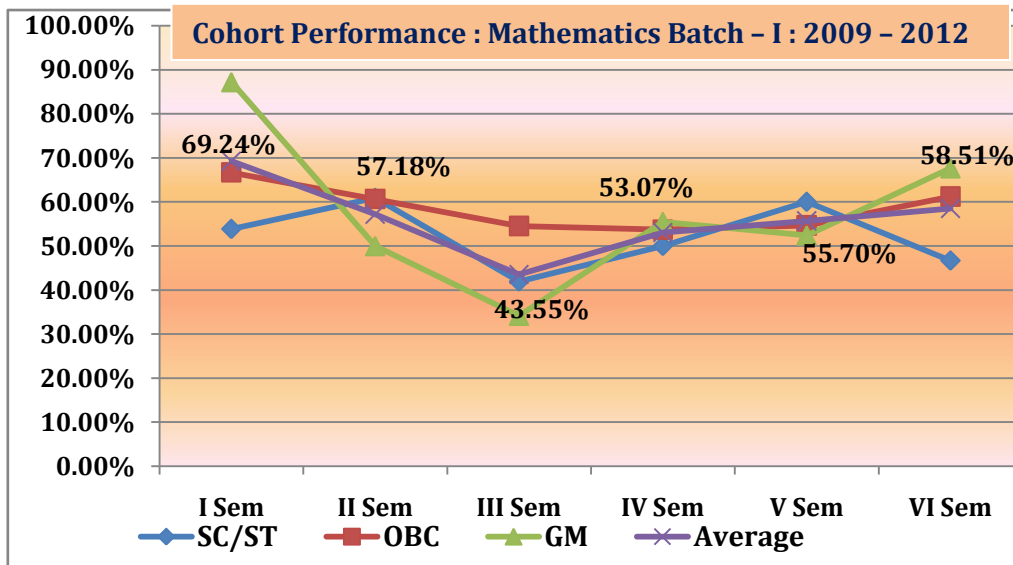
Trends in Success Rate of Mathematics Students : 2010 - 2014



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II. Cohort Performance of Mathematics Students : 2009 - 14
Batch - I : 2009 - 12

Category	I Sem	II Sem	III Sem	IV Sem	V Sem	VI Sem
SC/ST	53.85%	60.87%	41.94%	50.00%	60.00%	46.67%
OBC	66.67%	60.66%	54.55%	53.73%	54.69%	61.22%
GM	87.21%	50.00%	34.18%	55.48%	52.41%	67.65%
Average	69.24%	57.18%	43.55%	53.07%	55.70%	58.51%

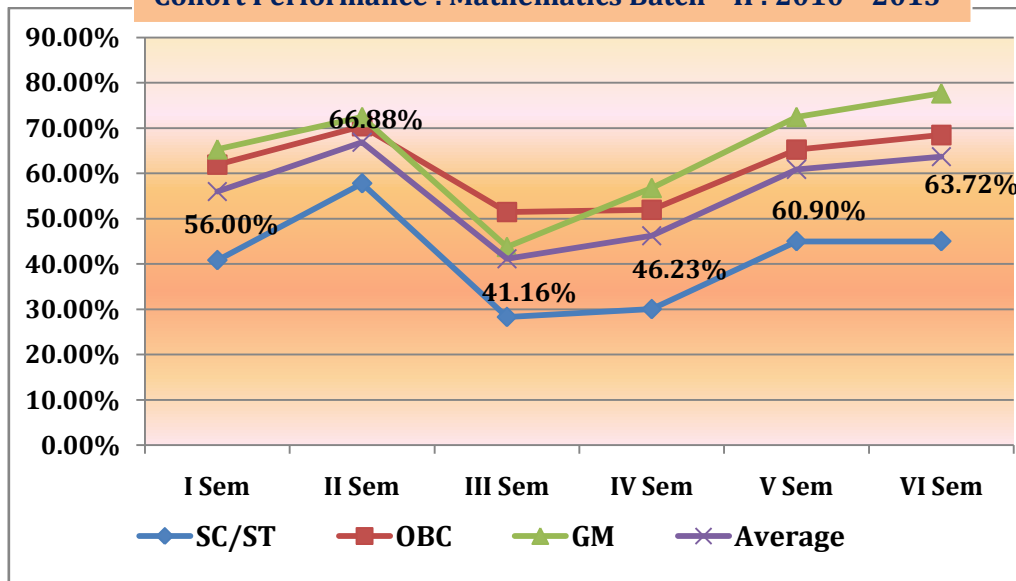




Batch - II : 2010 - 13

Category	I Sem	II Sem	III Sem	IV Sem	V Sem	VI Sem
SC/ST	40.82%	57.78%	28.26%	30.00%	45.00%	45.00%
OBC	61.90%	70.41%	51.46%	51.92%	65.26%	68.48%
GM	65.29%	72.45%	43.75%	56.78%	72.45%	77.67%
Average	56.00%	66.88%	41.16%	46.23%	60.90%	63.72%

Cohort Performance : Mathematics Batch - II : 2010 - 2013

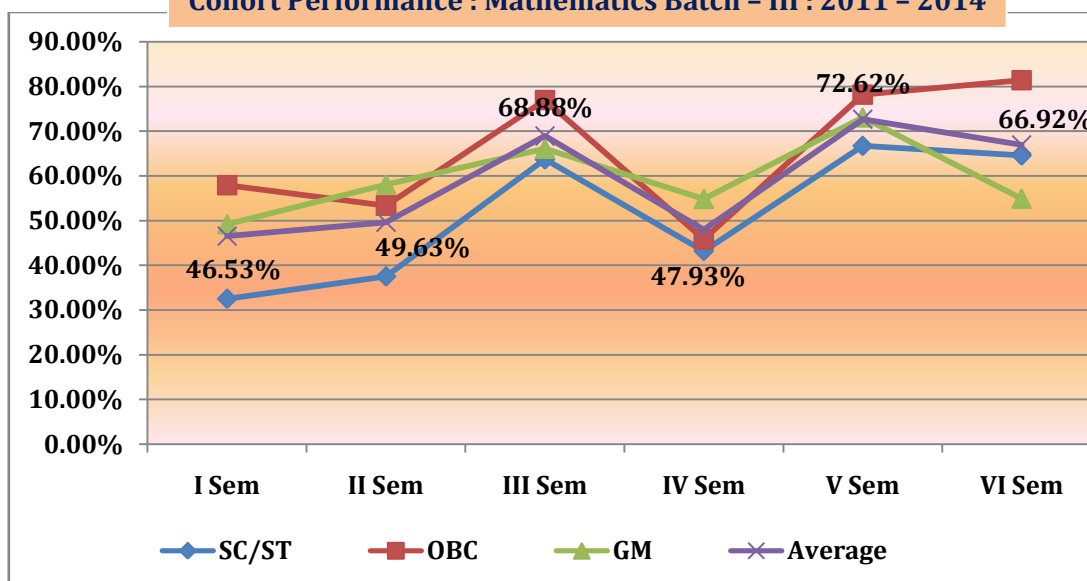


Batch - III : 2011 - 14

Category	I Sem	II Sem	III Sem	IV Sem	V Sem	VI Sem
SC/ST	32.50%	37.50%	63.64%	43.18%	66.67%	64.52%
OBC	57.89%	53.33%	76.92%	45.78%	78.13%	81.36%
GM	49.18%	58.06%	66.07%	54.84%	73.08%	54.90%
Average	46.53%	49.63%	68.88%	47.93%	72.62%	66.92%



Cohort Performance : Mathematics Batch - III : 2011 - 2014



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Students who have secured Centums in Maths in different semesters

Sl.No.	Name of the Student	Subject	Class	Year
1	LOKESH N	MATHS IV	IV Sem	2011 - 12
2	ANJALI P	MATHS VI	VI Sem	2011 - 12
3	LAKSHMI N	MATHS VI	VI Sem	2011 - 12
7	LOKESH N	MATHS V	V Sem	2012 - 13
8	ANAND T V	MATHS V	V Sem	2012 - 13
9	RAMYA	MATHS V	V Sem	2012 - 13
10	MEENAKSHI C	MATHS V	V Sem	2012 - 13
11	KIRITHI S	MATHS V	V Sem	2012 - 13
14	ROOPA R	MATHS VII	VI Sem	2012 - 13
16	PREETHAM M P	Maths IV	IV Sem	2013 - 14

35. SWOC analysis of the department and Future plans

Strengths

- ❖ Faculty dedicated, well experienced, highly qualified with minimum M.Phil. in the department
- ❖ Harmony amongst colleagues and good team work
- ❖ Use of ICT in the classes and Maths Lab
- ❖ Guidance to students to face competitive examinations
- ❖ Three Minor Research projects in the pipeline
- ❖ Bridge course for freshers
- ❖ Question bank prepared for all semesters



Weaknesses

- ❖ Lack of Mathematics Lab with necessary software
- ❖ Lack of conduct of National / International conferences
- ❖ Not sufficient number of ranks in the university examinations
- ❖ Limited spending on library books for mathematics department
- ❖ Limited digital content on website

Opportunities

- ❖ Coaching to train students to face IIT – JAM examination
- ❖ Departmental research project could be explored as many of the teachers have fluid mechanics background
- ❖ Depute teachers to workshop on modern teaching pedagogy
- ❖ Introduce add – on course in mathematics in collaboration with computer science department

Challenges

- ❖ Conflicting workload policies of university and government
- ❖ Interference of government in deciding the structure of mathematics course content in university decisions which is affecting the teaching – learning process in most of the institutions
- ❖ Alternative course options affecting the input quality to pure science stream

Future Plans

- Plan to introduce innovative academic programs relevant to the needs of the society and the students through career-oriented add-on programs.
- Motivate students to take up higher studies and encourage them to join research institutes by conducting orientation programs and training them to take competitive examinations
- Plans to develop interactions with national institutes of research and industry to tap the talent resource available there.
- Develop interdepartmental collaborations to introduce innovative teaching and research methodology.
