



Department of Mathematics, Sambalpur University

Evaluative Report for the period 2010-11 to 2014-15

1. **Name of the Department** : DEPARTMENT OF MATHEMATICS
2. **Year of establishment** : 1969
3. **Is the Department part of a School/Faculty of the university?** YES
4. **Names of programmes offered:** PG, M.Phil., Ph.D.
5. **Interdisciplinary programmes and departments involved** : M.A./M.Sc. programme with STATISTICS Department
6. **Courses in collaboration with other universities, industries, foreign institutions:** NO
7. **Details of programmes discontinued, if any, with reasons:**
The M. Tech (Computer Science) program which started in 2010 as a self financed course is transformed to the newly constituted SUIT.
8. **Examination System:** Semester
9. **Participation of the department in the courses offered by other departments** :
Our students take 3 courses in Department of Statistics.
10. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	02	00	02 (Advertised)
Reader	03	01	02(1 CAS)
Lecturer	05	04	03

11. **Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialization	No. of Years of Exp
Dr.(Mrs)S.Sahoo	MSc,MPhil, Ph.D	Reader	Random series of functions, Operator theory	28Years
Dr.N.R. Satapathy	MSc, Ph.D	Reader	Dirac operators,Geometry of Hamiltonian systems, Dirac structures	28Years
Dr.P.Gochhayat	MSc,MPhil,Ph.D	Lecturer	Geometric Functions Theory	06Years
Dr.A.K.Tripathy	MSc,MPhil,Ph.D	Lecturer	Differential equation	04Years
Dr.(Mrs) B.L. Panigrahi	MSc,MPhil,PhD	Lecturer	Numerical Functional Analysis	03 Years

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors:

Visiting Fellow - Prof. B.S. Panda, IIT, Delhi

Sri B. Pradhan, Retd. Principal, Nuapada College, Odisha

13. Percentage of classes taken by temporary faculty – programme-wise information :

P.G. Program:

Year	Percentage
2010-11	25%
2011-12	15%
2012-13	15%
2013-14	15%
2014-15	20%

14. Programme-wise Student Teacher Ratio :

Year	Ratio in P.G.	Ratio in M.Phil.	Remark
2010-11	35:3	11:3	
2011-12	35:4	12:4	
2012-13	49:4	14:4	Though faculty strength is 5, one is on study leave.
2013-14	69:4	15:4	Though faculty strength is 5, one is on study leave.
2014-15	69:5	15:5	

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual :

There is no sanctioned post for supporting staff (technical) and administrative staff. However following staffs has been deployed to the department by the authority.

Executive Assistant- 01

Peon- 01

Sweeper (daily wage)-01

16. Research thrust areas as recognized by major funding agencies:

- i) Analysis
- ii) Differential Geometry
- iii) Differential Equations
- iv) Complex Analysis
- v) Numerical Functional Analysis
- vi) Mathematical Modeling

17. Number of faculty with ongoing projects from a) National funding agencies b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

a) On Going Projects from National Funding Agencies

No. of faculty with ongoing projects	No. of Projects	Name of Funding Agencies	Project Title	Grant Received
02	02	ITRA, New Delhi	Development of effective Wireless Sensor Network system for water quality and quantity monitoring (Aquasense)	37 Lakhs
		DST, New Delhi	Eigenvalue Problem of a compact integral operator with weakly singular Kernel and multigrid method .	7.2lacs

- 18 Inter-institutional collaborative projects and associated grants received :

a) National Collaboration

No of faculty with Inter-institutional collaborative projects	No. of Projects	Name of Funding Agencies	Name of the collaborative Institutes	Project Title	Grants Received
01	01	ITRA, DEITY, New Delhi	<ul style="list-style-type: none"> • IIIT, Hyderabad • Central Univ., Hyderabad • VNR Vignana Jyoti Institute • Sri Chaitanya College of Eng., AP • Sri Chaitanya Institute of Tech. Sciences , AP • SUIIT, Sambalpur University 	Development of effective Wireless Sensor Network system for water quality and quantity monitoring (Aquasense)	37 Lakhs

Mentors of this project are from: ILLINOIS University, USA

AUBURN University.

- b) International collaboration: NIL

19. **Departmental projects funded by: DST**

Total grants received= 12+7.2=19.2 Lakhs (1 completed+ 1 ongoing)
(excluding inter institutional projects in item 18.)

20. **Research facility / centre with**

- State recognition
- National recognition
- International recognition

21. **Special research laboratories sponsored by / created by industry or corporate bodies :**

Name of the Laboratory	Sponsored by / created	Place of the Laboratory
ITRA Lab.	ITRA DEITY	SUIT

22. **Publications:**

Number of papers published in peer reviewed journals (national / international): 27

Monographs: Nil

Chapters in Books: Nil

Edited Books: Nil

Books with ISBN with details of publishers

Number listed in International Database (For *e.g.* Web of Science, Scopus,

Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Citation Index – range / average

SNIP

SJR

Impact Factor – range: 0 – 1.34

average: 0.396

h-index

23. **Details of patents and income generated : NIL**24. **Areas of consultancy and income generated : NIL**25. **Faculty selected nationally / internationally to visit other laboratories / institutions industries in India and abroad :****Institution visited for Post Doctoral Work:**

Year	Name of the Faculty	Institution Visited	Period
2012	Dr. P. Gochhayat	University of Pretoria, South Africa	Aug 2012-July 2014

Institution visited for attending conferences:

Year	Name of the teacher	Period/place	Name of the conference	Participated/presented paper
2010-11	P.Gochhayat	19 th -27 th Aug. 2010, Hyderabad	International Congress of Mathematicians (ICM)2010,	Presented the paper "Sandwich type theorems for some subclasses of multivalent functions associated with differential operator"
	P.Gochhayat	12 th -13 th , Mar. 2011, Central Univ. Rajasthan	National Seminar on ACASF	Participated
2011-12	N.R.Satapathy	4 th -5 th , Feb. 2012, VIVTECH, Bhubaneswar	39 th Annual conf of OMS and National conf on Cryptography,	Participated
	S. Sahoo	4 th -5 th , Feb. 2012, VIVTECH, Bhubaneswar	39 th Annual conf of OMS and National conf on Cryptography,	Participated
	N.R.Satapathy	19 th -21 th , Aug.2011, Hyderabad	Mathematics Education, trends and challenges	Participated
	P.Gochhayat	28 th Nov-2 nd Dec.2011, Port Elizabeth, South Africa	Joint International congress of South Africa and Americal Mathematical Society	Presented the paper "Sandwich type theorems of some subclasses of multivalent functions defined by Dziok-Srivastava operator"
2012-13	A.K.Tripathy	3 rd -7 th Sept.2012, Greece	International conf on Diff. Eqns, Difference Equations and special functions,	Presented the paper on "New Oscilation Criteria for Fourth Order Difference Equations"
	P.Gochhayat	30 th Oct.-2 nd Nov. 2012 Stellenbosch, South Africa	Annual conf of South Africa Math Soc.	Presented the paper "Sandwich type theorems and convolution properties of some subclasses of multivalent functions defined by an adaption to Srivastava-Attiya operator"
	P.Gochhayat	12 th Nov. 2012 University of Pretoria, South Africa	Research Seminar: Orthogonal polynomials and Special functions- a Complex Analytic Perspective	Presented the paper "Typically real functions and their connection to Chebyshev polynomials"
	P.Gochhayat	29 th -30 th Dec.2012, Dept. Of Math., Sambalpur Univ.	40 th Annual conf of OMS and National conf on Fourier Anal. and Diff Eqns.	Participated
	P.Gochhayat	10 th -14 th Jun. 2013, Shantou, China	International conf of CMFT	Presented the paper "On certain subclasses of multivalent functions"

26. **Faculty serving in :**

- a) National committees- **Selection committee OPSC, member of Executive body of OMS**
- b) International committees: Nil
- c) Editorial Boards : **Faculty members are**
 - **member of editorial board Ganita Bichitra, published by OMS**
 - **Member of editorial board of Saptarshi, a literary magazine of Sambalpur University.**
- d) any other (please specify): **Faculty members are**
 - **Referee of various journals of national and International repute like Jr. of applied Math and Computation, Jr. of Complex Analysis, Tamkong Jr. of Math,**
 - **Reviewer of American Math. Soc.**
 - **Member of Board of studies of CBCS, Odisha.**
 - **Member of Board of studies of Sambalpur University**

27. **Faculty recharging strategies** (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Refresher courses/ orientation programs, workshops, MTTTS training programme.

Following is the list of faculties participated in workshops , Refresher courses and MTTTS training programm:

Year	Name of the teacher	Name of the Workshop/Refresher Course and Place	Nature of Participation	Period
2010-11	P.Gochhayat	MTTS programme, RIE, Mysore	Participated as tutor	17 th May-12 th Jun 2010
2011-12	A.K.Tripathy	Refresher Course on "Mathematical Modeling"	Attended	2 nd -22 nd Jan. 2012
2012-13	B.L.Panigrahi	Adv workshop on AWNSFEM, Mumbai	Participated	11 th -15 th Feb. 2013
2013-14	N.R.Satapathy	ITRA water.... International Workshop, New Delhi	Participated	1 st -3 rd Jan. 2014
	A.K.Tripathy	Refresher Course on "History and foundation of Mathematics"	Attended	3 rd -23 rd Jan. 2014
2014-15	N.R.Satapathy	"IT Innovations Sustainability of Water resources Review and Feedback Workshop" Bangalore	Participated	30 th Jul-4 ^{tg} Aug. 2014
	N.R.Satapathy	NUEPA Workshop, Patna	Participated	8 th -10 th Dec.2014

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects:

100% (All P.G. IVth Semester students do dissertation/project work in the department as per the curriculum.)

- percentage of students doing projects in collaboration with other universities industry / institute

Following is the percentage of P.G. students selected to participate in different summer projects in various institutions:

Year	Percentage of students	Name of the program	Name of the institution
2011-12	10%	Summer Program In Mathematics	HRI, Allahabad
		Level -2 MTTS	Mysore
2012-13	3%	Level -1 MTTS	NIT, Surat
2013-14	3%	MTTS	Mysore
2014-15	33%	Training in Problem in Mathematics	NISER, BBSR
		Summer Outreach Program in Mathematics	NISER, Bhubaneswar
		Summer Program In Mathematics	HRI, Allahabad
		MTTS	Chennai Mathematical Institute

29. Awards / recognitions received at the national and international level by

- Faculty**

One of the research paper in Applied Mathematics Letter of Dr. P.Gochhayat was selected in top 25 Science Direct Publication in 2010, Till date the citation is more than 120.

- Doctoral / post doctoral fellows**

- Students:**

Ms. Rasmi Rekha Patra, M.Phil. student, received a best paper presentation award in the 41st Annual conference of Orissa Mathematical Society and National conference on Fourier Analysis and Differential Equations held during 29th-30th Dec. 2012.

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

a) Conferences organized:

Year	Name of Conference	Period	Funding agencies	Outstanding participants
2010-11	International Congress of Mathematicians (ICM) Satellite Conference on Probability and Statistics ICMSIC-2010 in collaboration with Dept of Statistics	1st-3 rd Sept. 2010	ICM,DST, UGC	R.Sainudiin, Univ. Of Canterbury, New Zealand G. Trutnau, Seoul National University, South Korea N.L.Hjort , Univ. Of Oslo, Norway J.V.Despande, Univ of Pune,India H.N.Dutta, Dibrugarg Univ R.N.Misra, Patna Univ. Suman Muzumdar, University of Connecticut, USA S.K.Singh, Pt. R.S .Univ, Raipur B.R. Victor Babu, Nagarjuna Univ, AP M.N.Misra, IMA,BBSR
2012-13	40 th Annual Conference of Orissa Mathematical Society and National Conference on Fourier Analysis and Differential Equations	29 th -30 th Decem ber 2012	DST, NBHM, CSIR, UGC	Prof. G.Das, Ex-Vice chancellor, Utkal Univ. Prof. P.C.Das, NISER, Bhubaneswar Prof. N. Parhi, Retd. Prof., Berhampur University Prof. M.N. Mishra, Retd. Prof. Sambalpur Univ. Prof. Arun. K. Pujari, Central Univ., Hyderabad Prof. Amiya K. Pani, IIT, Bombay Prof. Bhawani S. Panda, IIT, Delhi Prof. B. R. Behera, ISI, Kolkata Prof. Swagato Ku. Ray, ISI, Kolkata
2014-15	National workshop on Mathematical modelling of Water Pollution in collaboration with Dept of Environmental science, SUIIT	14 th - 16 th March 2015.	Sambalpur University UGC (unassigned grant)	Prof. S.Roy, Biswabharati University Prof. S.K. Udgata, Central University, Hyderabad Dr. J. Ratha, Sunjray Infosystem Prof. R. K. Panda, IIT Bhubaneswar Mr. H.K. Sahu, Central Water Commission Prof. P.C. Swain, VSSUT, Burla.

- b) Refresher courses Organised: under UGC Human Resource Development Center, Sambalpur University.

Year	Title of the Refresher course	duration
2010-11	Quantitative Techniques and computational methods	13 th Dec.2010 to 2nd Jan 2011
2011-12	Mathematical Modeling	2 nd -22 nd Jan. 2012
2013-14	History and foundation of Mathematics	3 rd -23 rd Jan. 2014
2014-15	Mathematical modelling and Simulation	16 th Dec. 2014-5 th Jan. 2015

31. Code of ethics for research followed by the departments:

Faculty members in the department follow all measures taken by university for preventing plagiarism.

32. Student profile programme-wise:

Name of the Programme	Applications received	Selected		Pass Percentage	
		Male	Female	Male	Female
P.G.(2010-11)	61	16	04	50%	25%
P.G.(2011-12)	66	15	05	75%	00%
P.G.(2012-13)	156	20	16	76.5%	85.7%
P.G.(2013-14)	223	15	21	71.4%	45%
P.G.(2014-15)	269	20	16	Result Awaited	
M.Phil.(2011)	31	04	07	75%	100%
M.Phil.(2012)	25	05	07	40%	80%
M.Phil.(2013)	36	07	07	71.4%	83.3%
M.Phil.(2014)	50	08	07	85.7%	100%
M.Phil.(2015)	51	04	11		

33. Diversity of Students

Name of the Programme	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
P.G.(2010-11)	10	10	--	--
P.G.(2011-12)	07	09	04	--
P.G.(2012-13)	27	08	01	--
P.G.(2013-14)	16	19	01	--
P.G.(2014-15)	25	11	--	--

Name of the Programme	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M.Phil.(2011)	6	5	--	--
M.Phil.(2012)	3	9	--	--
M.Phil.(2013)	0	14	--	--
M.Phil.(2014)	2	13	--	--
M.Phil(2015)	05	10	--	--

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

There is no official data regarding this. However as far as our knowledge is concerned we have the following informations

Year	No. of students Qualified NET/CSIR		No. of students Qualified GATE	
	Gen.	S.C.	Gen.	S.C.
2010-11	--	01	02	01
2011-12	--	--	01	--
2012-13	--	--	--	--
2013-14	01	--	01	01
2014-15	--	--	02	--

35. Student progression :

Student progression	Percentage against enrolled
PG to M.Phil	2010- 0 % 2011- 36 % 2012- 40 % 2013- 0 % 2014- 13 % 2015- 33 %
PG/M.Phil. to Ph.D	2010- 0 % 2011- 0 % 2012- 80 % 2013- 67 % 2014- 80 % 2015- 50 %
Ph.D. to Post-Doctoral	Nil

36. Diversity of staff

Percentage of faculty who are	
graduates of the same university	80.0%
from other universities within the State	20.0%
From Universities of other states	
From Universities outside of the country	

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

38. Present details of departmental infrastructural facilities with regard to

a) Library : Departmental Seminar Library

i) Is funded by NBHM, UGC

ii) has Air conditioned reading room facility

iii) has 6334 nos. of text books and reference books.

b) Internet facilities for staff and students : **e-governance facility has been provided to all teachers room and to the laboratories for students**

c) Total number of class rooms : **class rooms are common with Statistics Dept.**

03 (40 capacity)

01 colloquium Hall(200 capacity)

d) Class rooms with ICT facility : **For presentation of seminar and for class room use the deptt. have LCD projector, 01 ceiling mount projector and one visualizer**

e) Students' laboratories : **03 with 46 computers**

(02 for P.G. students; 01 For M.Phil./Ph.D. students)

f) Research laboratories : **One**

39. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university

Doctoral –

- i) Jita Parida
- ii) Bikash Ku. Chinhara,
- iii) Pramod Swain,
- iv) Suresh Ch. Sahoo,
- v) Rasmita Sutar,
- vi) Jitendra Ku. Mallik
- vii) Bharati Panda,
- viii) Rasmi Rekha Patra,
- ix) Swagatika Sahoo.
- x) Rashmi Rekha Mohanta
- xi) Shyam Sunder Santra
- xii) Abhaya Ku. Sethi
- xiii) Sankarsana Tarai
- xiv) Lipika Parida
- xv) Debasmita Mahapatra

- b) from other institutions/universities
- i) Laxmidhara Sahoo
 - ii) Abhishek Satapathy,
 - iii) Pravat Panda.
 - iv) Hari Sharma
 - v) Iteshree Pradhan

40. Number of post graduate students getting financial assistance from the university:

There is no source of the University to give financial assistance to students. However following are the fellowships and scholarships received by the students: (during last 5 years)

Name of fellowship/Scholarship	Nos. of students receiving
State level science scholarship by Odisha DST	21
INSPIRE fellowship	4
Sibananda Scholarship	5
RGNF fellowship	2

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. N/A

42. Does the department obtain feedback from

- a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?
All the faculties of our autonomous department restructure and update the syllabus on the approval of the Academic committee.
- b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
Yes, We obtain feedback and take care of the negative points of the teachers evaluated by the students.
- c. alumni and employers on the programmes offered and how does the department utilize the feedback? No.

43. List the distinguished alumni of the department (maximum 10)

- i) Prof. Arun K. Pujari, Central University, Rajasathan
- ii) Prof. Pramod Das, NERIST
- iii) Prof. Om Prakash Agrawala, Cooper Union, New York
- iv) Prof. Gadadhar Mishra, IISC, Bangalore (winner of SS Bhatnagar award)
- v) Prof. K. Srinivas, Inst. Of Mathematical Sciences, Chennai

- vi) Prof. B.S. Panda, IIT, Delhi
- vii) Prof. Pratima Panigrahi, IIT, Kharagpur
- viii) Prof. Parasar Mohanty, IIT, Kanpur
- ix) Prof. Biswaranjan Behera, ISI, Kolkata
- x) Prof. Sukanta Pati, IIT, Guwahati

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Special Lectures

Year	Title of the lecture	Name of the Extranal Expert
2012-13	An introduction to time scale calculus.	Mr. P. Ramy Reddy, Central University, Hyderabad
2013-14	On Zeros of Third order differential Equations	Dr. Saroj Panigrahi , Central University, Hyderabad
2014-15	i) Graph Theory (Series of Lectures) ii) C-Programming (Series of Lectures)	Prof. B. S. Panda, IIT-Delhi

45. List the teaching methods adopted by the faculty for different programmes.

- The teachers prefer black board teaching for teaching mathematics. However in some classes LCD projectors, visualizers and internet facility are used to expose the students to the state of the Art.
- The teachers use the internet facility in computer Lab to acquaint students on using all open source Lab soft wares like GEOGEBRA, SCILAB, etc.

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

We are very clear about our objectives:

Firstly, we want to produce motivated well trained students in Mathematics. Secondly, we want to have some impact on Mathematics Research as far as our strength is involved.

The Academic Committee of department of Mathematics meets at least twice in a year. The Academic Committee monitors the plans and outcomes of all the academic programs. They suggest many new ideas to improve the curriculum of the department. But sometimes We fail to implement due to shortage of teaching staffs. The idea of 5 years integrated M. Sc. in Mathematics course given by the Academic Committee is still open.

Last year we had a meeting with TCS company, Bangalore on opening a Data Analysis Course, where they would have participated. We are still trying to implement that. So, the Teacher Council and Academic Committee monitor constantly the program, objective and learning outcome in the department. Besides we have introduced proctorial system allotting a small group of students

to every teacher to take care of his academic growth. That also monitor the directional growth of every student in the department.

47. Highlight the participation of students and faculty in extension activities.

- a) In 2010 the students of the department in the leadership of Ms. Bijayinee Behera, a P.G. student, started a program called “Banamanjari” to clean the surrounding of the department.
- b) Students and faculty are participating in the Swachha Bharat Abhiyan program.
- c) Department has organized a 03 days state level training **workshop on Learning Mathematics through Origami** in collaboration with Samanta Chandrasekhar Vigyan Club (Balasore) during 11-13 Jan. 2015. **School teachers** of this region **participated** in this programme. **Dr. A. K. Tripathy** was the local **co-ordinator**.

48. Give details of “beyond syllabus scholarly activities” of the department.

- i) **Students deliver regular seminar** in the presence of all teachers and all students in the seminar class of two hours on Wednesday of every week as in the time table, in order to develop their communication skill and acquaint them for blackboard and power point presentation.
- ii) Students run a **wall magazine** on their own.
- iii) Students of the department organize an **inter institutional Mathematics quiz** every year named Sushama Memorial Mathematics Quiz which is being organized since 1988 in memory of a bright student Late Sushama Padhi who passed away then.
- iv) Some students who are interested to peruse Mathematics as a career stay back in the department during evening hours and discuss Mathematics in the department library where all the facilities are available.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Mostly the faculties are contributing in pure mathematics. They are working in the areas of geometric function theory, oscillation theory, numerical functional analysis, Random series of functions, Dirac operators, Geometry of Hamiltonian systems, and Dirac structures. 21 nos. of paper has been published in reputed journals during last five years. Ph.D./Research scholars/ M.Phil. students are working in these areas.

Dr. P Gochhayat is working on Geometric function theory. In particular, he is interested on various class mapping properties, coefficient problems of some subclass of analytic univalent and/or multivalent function. Further he is now trying to solve the problem of finding the zero location of ${}_3F_2$ hypergeometric polynomials for real parameter, which is challenging, since the ${}_3F_2$ polynomials don't have general

orthogonal structure. He is also looking on the bounds and the interlacing properties of zeros of q -orthogonal polynomials.

Dr. A. K. Tripathy is studying on Oscillation properties of different class of non linear neutral differential equations, delay differential equations, difference equations, functional difference equations, differential equations with piecewise constant arguments, and functional dynamic equations on Time Scales.

Dr. B.L.Panigrahi is studying on eigen value Problems of some compact integral operators using different methods like Legendre Multi projection methods, Richardson extrapolation of iterated discrete collocation method, etc. She is now looking into the solution of weakly singular Fredholm integral equations and the corresponding eigenvalue problem using singularity preserving and hybrid collocation methods, as the integral equations with weakly singular kernels of algebraic and logarithmic type cover many important applications .

Dr. S. Sahoo is studying on random Fourier series associated with orthogonal polynomials. She is also looking into the random Dirichlet series having random coefficients which are not independent.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strength:

- i) Our NET/GATE friendly syllabus is at par with the syllabus of other national institutes.
- ii) Our NET/GATE awarded students have been selected in various national institutes like IIT,NIT, etc. for pursuing their career. Many of them are absorbed as faculty members across the National Institutes of the country.
- iii) Our seminar library building with reading room facility funded by NBHM, UGC has 6334 nos. of text books and reference books.

Weakness :

- i) The greatest problem in the Department is lack of teaching hands. The sanctioned faculty strength of the department is 10, where as we are only five now.
- ii) The department is academically autonomous. But there is no required number of non-teaching staff. We do not have any supportive hand for our seminar library and computer laboratory. There is no computer programmer in the Laboratory of the Department. Teachers have to manage everything and that makes life difficult if one is sincerely catering to the need of the student.
- iii) Mathematical softwares like MATLAB, MATHEMATICA are not available in the lab. Even if we think of to start the programme like Scientific Computing in MA/MSc Mathematics, still we are unable to start it.
- iv) MATHSCIENET or IEEE facility are not available here.

Opportunities :

- i) This department is known for its student friendly atmosphere. We attend to all the problems of the students at a very intimate personal level.
- ii) Students can avail reading room facility late in the evening. They can approach teachers for their doubts. They can issue books even if at off hours. Teachers do it for the benefit of the students, though this makes teachers too busy.
- iii) Many students join summer camps/MTTS Camps etc. at reputed places. Students apply here for this opportunity.

Challenges

- i) Getting all the vacant posts filled up and getting requisite non teaching staffs in the Department.
- ii) To build the department as an active quality research institute.
- iii) To make the department socially and infrastructurally more meaningful. Getting adequate funding from various sources for all these activities is a big challenge.

52. Future plans of the department.

- i) To start 5 years INTEGRATED MA/MSc programme along with evening diploma in Scientific Computing.
- ii) To provide data analytics courses as a specialisation to some MA/MSc students from current session
- iii) To open Data Analytics Course, in collaboration with TCS from next session.
- iv) To give a proposal to the university to establish a center on ECOLOGICAL MODELLING SIMULATION AND DESIGN in COLLABORATION WITH DEPARTMENT OF ENVIRONMENTAL SCIENCE and SUIIT as an extension to the ITRA activity on water pollution control.
- v) To organise workshops /conferences in different areas funded by different National funding agencies.

Publications of School of Mathematics (2010-15)

- Gochhayat P (2010) Invariance of some subclasses of multivalent functions under a differ-integral operator. *Complex Variables and Elliptic Equations*, 55(7): 677-689.
- Gochhayat P (2010) Fekete-Szegö problem for a class defined by an integral operator. *Kodai Journal of Mathematics*, 33: 310-328.
- Gochhayat P (2010) Certain subclasses of analytic and bi-univalent functions. *Applied Math. Letters*, 23: 1188-1192.
- Gochhayat P (2011) A coefficient inequality for a subclass of the Carathodory functions defined using conical domains. *Computers and Mathematics with applications*, 61(9): 2816–2820.
- Tripathy AK (2011) On the oscillation of a class of nonlinear delay difference equations of second order. *Ind. J. Pure & Appl. Math.* 42: 27-40.
- Tripathy AK (2011) Asymptotic integration of higher order nonlinear neutral dynamic equations. *J. Appl. Math.* 51: 27-44.
- Tripathy AK (2011) Oscillation theorems for fourth order nonlinear neutral equations with quasi-derivatives-I. *Int. J. Math. Sci. Appl.* 01: 377-393.
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Snapshots of The Departmental Activities



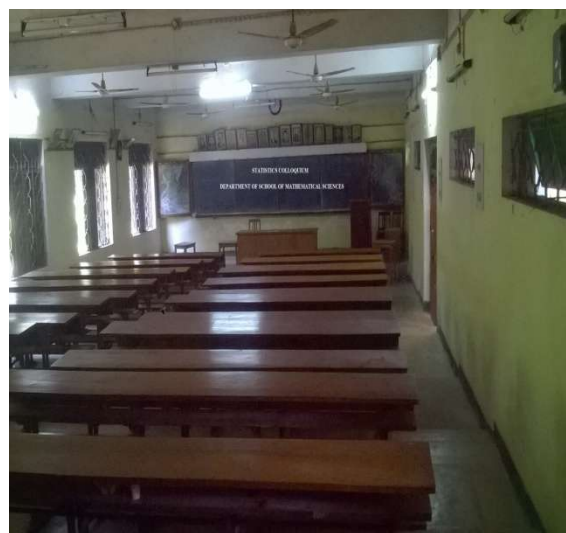
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