

## **Evaluative Report of School of Basic Science and Research (SBSR)**

1. **Name of the Department:** Mathematics.
2. **Year of establishment:** 2013
3. **Is the Department part of a School/Faculty of the university:**  
Yes  
SCHOOL OF BASIC SCIENCES & RESEARCH ( SBSR),  
( Formerly department of applied sciences).
4. **Names of programmes offered:**  
B.Sc., M.Sc.(Maths), B. Stat., M.Stat.(Statistics)
5. **Interdisciplinary programmes and departments involved:**  
B.Sc. (MATHS), B.Stat., Physics, Chemistry, SOL.
6. **Courses in collaboration with other universities, industries, foreign institutions, etc.:**  
NIL
7. **Details of programmes discontinued, if any, with reasons:**  
NIL
8. **Examination System:** Semester system
9. **Participation of the department in the courses offered by other departments:**  
M. Sc. (Phy.), M. Sc. (Chy), M. Sc. (Micr), BBA , B. Com (LLB) and B.Tech.
10. **Number of teaching posts sanctioned, filled and actual (Professor/Associate Professor/Asst. Professor/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
<b>Professor</b>			1

<b>Associate Professor</b>			1
<b>Asst. Professor</b>			10
<b>Others</b>			2- Assistant Professor Visiting  1-Adjunct Professor

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

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Prof. A. H Siddiqi	M. Sc., Ph. D.	Adjunct Professor	Functional Analysis, Wavelet techniques, Financial Mathematics	47 years	9 Ph. D Students are under guidance
Prof. U.V Balkrishnan	M. Sc., Ph. D.	Professor	Analytic Number Theory	38 YEARS	NIL
Dr. N.M Chaddha	M. Sc., Ph. D.	Associate Professor	Adaptive Mesh Generation, Numerical Analysis	16 Years	NIL

Dr. Khursheed Alam	M. Sc., Ph. D.	Asst. Professor	Non- Linear Dynamical Systems	8 YEARS	2 Ph. D Students are under guidanc
Dr. Sangeeta Gupta	M. Sc., Ph. D.	Asst. Professor	Operation Research	10 Years	NIL
Dr. Sweta srivastva	M. Sc., Ph. D.	Asst. Professor	Graph Theory	6 Years	NIL
Mr. Shahid Baboo	M. Sc., NET	Asst. Professor	Special Functions	11 years	NIL
Ms. Archana prasad	M. Sc., NET	Asst. Professor	Topology	11 Years	NIL
Dr. Alpna Mishra	M. Sc., Ph. D.	Asst. Professor	Mathematical Modeling	7 years	NIL
Mr. Anshu Kumar	M. Sc., NET	Asst. Professor	Partial differential Eqn.	9 years	NIL
Dr. Nidhi Sahni	M. Sc., Ph. D.	Asst. Professor	Hypergeometr ic functions	2.5 years	NIL
Dr. Manoj Kumar	M. Sc., Ph. D.	Asst. Professor	Baysian Inference (Statistics)	1 year	NIL
Dr. Sunil Maurya	M. Sc., Ph. D.	Asst. Professor	Fluid Dynamics	4 years	NIL
Dr. Gunjan Singh	M.Sc,Ph. D	Asst. Professor	Demography (Statistics)	2 years	NIL

**12. List of senior Visiting Fellows, adjunct faculty:**

Visiting Faculty

- i) Ms. Reena Nupur
- ii) Ms. Arti Malik

Adjunct Professor

- i) Professor A. H Siddiqi

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

10%

**14. Programme-wise Student Teacher Ratio:**

M.Sc.(Maths)- 5:4, M.Sc.(Stats)-6:3, B.Sc. 1:1.

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

1

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

Nil.

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

Nil

**18. Inter-institutional collaborative projects and associated grants received**

a) National collaboration: Nil.

b) International collaboration: Nil

**19. Departmental projects funded by DST-FIST; UGC-SAP/CAS,**

**DPE; DBT, ICSSR, AICTE, etc.; total grants received.**

Nil

**20. Research facility / centre with**

- **state recognition:** Nil.
- **national recognition:** Nil.
- **international recognition:** Nil.

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

Nil.

**22. Publications:**

- \* **Number of papers published in peer reviewed journals (national / international):**  
114
- \* **Monographs:** Nil.
- \* **Chapters in Books:** 1
- \* **Edited Books:** 9
- \* **Books with ISBN with details of publishers:** Nil.
- \* **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.):**  
55
- \* **Citation Index – range / average:** 1-5/2
- \* **SNIP:** Nil.

\* **SJR:** Nil.

\* **Impact Factor – range / average:** 0.42-2.7/1.5

\* **h-index:** 37

**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:**

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**26. Faculty serving in**

**a) National committees b) International committees c) Editorial Boards d) any other (please specify):**

- One faculty is reviewer in international Journal of Applied Mathematics with impact factor 1.534. He is also reviewer of European Journal of Operation Research.
- One Faculty is editor of Eritrean J. of Science and Engineering. He is also referee for Journal of Korean Math.soc.& Monatshefte fur mathematik
- One is Refers Korean Math Society.
- Two faculties are the board member and reviewer of International Journal of Mathematics Trends and Technology.

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

Special Lecture (every 1 st & 3 rd Saturdays during Semester)

**28. Student projects**

- **percentage of students who have done in-house projects including inter- departmental projects:**  
Being done now for M.Sc (maths) & M.Sc(Stats)

- **percentage of students doing projects in collaboration with other universities / industry / institute:** Nil.
29. **Awards / recognitions received at the national and international level by**
- **Faculty:** Nil.
  - **Doctoral / post doctoral fellows:** Nil.
  - **Students:** Nil.
30. **Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.:**  
Nil.

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

In addition to excellence in Science, a strict adherence to high ethical standards is a necessity. The core ethical policy of DAE is to establish a tradition with highest ethical standards, ensuring a harmonious future for the entire humankind, where every individual can live with dignity and self-respect. In accordance with the guidelines of the DAE, adhering to highest ethical standards is one of the guiding values of snip. Every complaint of malpractice or plagiarism received is investigated and appropriate action is taken.

**32. Student profile programme-wise:**

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
<b>B.Sc.</b>					
<b>B.Stat.</b>					
<b>M.Sc. (Maths)</b>					
<b>M.Stat.</b>					

**33. Diversity of students:**

Name of the Programme (refer to question no. 4)	% 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
B.Sc.	0	100	-	-
B.Stat.	0	100	-	-
M.Sc.	0	0	0	100
M.Stat.	0	0	0	100

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

Nil.

35. Student progression: Nil.

Student progression	Percentage against enrolled
UG to PG	Nil
PG to M.Phil.	-
PG to Ph.D.	-
Ph.D. to Post-Doctoral	-
Employed <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	-
Entrepreneurs	-

36. Diversity of staff

Percentage of faculty who are graduates
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<b>of the same university</b>	<b>NIL</b>
<b>from other universities within the State</b>	<b>30%</b>
<b>from universities from other States</b>	<b>70%</b>
<b>from universities outside the country</b>	<b>One faculty Ph. D. from abroad</b>

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

Two faculty

**38. Present details of departmental infrastructural facilities with regard to**

- a) **Library:** Central Library.
- b) **Internet facilities for staff and students:** Fully wi-fi Campus.
- c) **Total number of class rooms:** 2
- d) **class rooms with ICT facility:** 2
- e) **Students' laboratories:** 1
- f) **Research laboratories:** Nil.

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

- a) **from the host institution/university:** 9+1
- b) **from other institutions/universities:** 1

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

Nil.

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

**methodology.**

No

**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?**

Yes, We discuss the feedback in BOS and improve the syllabus and get it approved through executive council.

- b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?**

We share the students feedback in faculty meetings provide suggestions for improving the teaching-learning process for betterment of education system.

- c. alumni and employers on the programmes offered and how does the department utilize the feedback?**

NOT DONE

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

Not yet.

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

Biweekly lectures by external experts.

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

List of teaching methods:

- The faculty in Maths Department are encouraged to use the latest technology available for teaching; for instance, most of the classrooms for Maths Department are equipped with projectors, advanced audio-amplification-systems and wi-fi networks.

- Every faculty member prepares a lesson plan for each course, and time to time progress is being monitored by competent senior faculties.
- For B.Tech Ist year and IInd year classes where Engg. Maths is being taught as a common subject in various streams, a coordinator is nominated from the department to comprehend the overall progress of the subject in various classes. The co-ordinator gets the study material ready with the help of his fellow educators and makes sure the students get access to that material.
- A continuous assessment provides educators with a better understanding of what students are learning and it also helps to engage the students in learning deeper concepts of the subject. In doing so, the educators from Maths Department provide tutorials, assignments on regular intervals to the students. They also conduct tests, and quizzes on weekly basis.
- The faculty members in the department encourage *engaged pedagogy* which refers to using teaching approaches that encourage one-to-one interaction between smaller groups in a class. Often, the instructor takes on the role of a facilitator in this approach.

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

All faculty members maintain their course file in which they have to keep record of all the tests, assignments, quizzes given to the students in a due course of time. The file is checked by the co-ordinators on regular intervals.

Every faculty member prepares a lesson plan for each course, and time to time progress is being monitored by the co-ordinators .

The Co-ordinator for a course comprehends the overall progress of the subject syllabus taught in various classes. At various stages, the progress is also monitored by Head of the Department(s) and Dean(s) of the school.

The department invites eminent guests to interact with the students in order to motivate them from their personal and professional experiences. This also provides an opportunity for a reality-check for the courses run by the department in order to meet the industry-requirements.

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

There is a Mentor who is also a faculty member and for every group of thirty students in a class. His role is to interact with students on one-to-one basis, and help them to resolve any issue which may come during the course of their study.

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

The school invites eminent guests from various fields for their expert talk. In this semester till date, we had three expert talks which are mentioned below:

- Prof. Boumediene Chentouf from Sultan Qaboos University, Oman gave a talk on "OPTIMAL CONTROL IN PDE'S".
- Prof P. K. Verma (retired from Aligarh Muslim University, Aligarh) gave a talk on "Experimental techniques in spectroscopy".
- Dr. Sanjay Sengupta, Principal scientist & Editor JSIR, NISCAIR, CSIR, New Delhi on “NISCAIR activities of writing scientific papers and Science Communication”.

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

No

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

- 1) Papers( on refereed Journal).-one paper in mathematical model, methods & algorithms
- 2) Workshops & invited talks.-Two or three events per year
- 3) Ph.D. Students- guidance -11 PhD students
- 4) Projects- Projects in M.Sc. programs.

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

**Strengths:**

The department has faculty members with vast experience in teaching in India and abroad.

There is a healthy competition amongst the faculty members to initiate and accomplish various academic activities. Yet without a doubt it can be said that the department works as a unit as and when, it is needed.

The quality of students is very good because of very rigorous selection process adopted. Since a vast majority of the students are recruited through a tough selection process, a very high level of research output is ensured. This is contrary to the general trend seen elsewhere where students not finding employment are taking up research. After a tough selection, the training imparted to the students is of very high standard. The quality of research and infrastructural facilities available are very good. The funding is generous. Besides the quality of students, the faculty profile is very strong, nationally and internationally known and there is a very strong peer pressure on students and faculties to do better.

**Weaknesses:**

Ensuring very high quality sometimes leads to a low number of students in some of the disciplines. Faculty look at themselves as scientists first and give lower priority to mentoring students. This is expected to improve over the years as faculty takes more and more students.

**Opportunities**

Opportunity to do high level research having immediate application in national programmes. Opportunity to interact with scientist at national level and international level. Opportunity to get various forms of national and international recognitions in the form of fellowships and awards. Opportunity to develop various types of skills. Opportunity to do interdisciplinary research.

**Challenges**

To balance various types of responsibilities for the faculty. To balance between various types of responsibilities for the employees enrolled as students. To publish results of research on strategic topics without compromising classified nature of information. To ensure superiority in quality of research while doing doctoral research on large scale set-ups.

## **52. Future plans of the department:**

Apart from running the conventional courses, the department aims to run specialized courses. These courses may be helpful to motivate and develop a better understanding in cutting edge research areas.

The department aims to be actively involved in current research areas. Get more funding from various funding agencies and to supervise more research students. The department also aims to collaborate with eminent faculty members from other national and international universities.