



# *Kalindi College*

(NAAC Accredited 'A' Grade)

University Of Delhi



***DEPARTMENT OF MATHEMATICS***

***ACADEMIC SESSION***

***2020-21***



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**1. Brief Introduction of Department:**

- Mathematics, the queen of science, has taken prominent importance in recent years leaving no field of study and research left untouched. Mathematics is used throughout the world as an essential tool in numerous fields including natural science, engineering, finance, social science etc. Study of Mathematics provides not just only the knowledge of subjects, but also helps to develop a skill- set needed in various other fields too.
- Department of Mathematics had its origin in 1967, during the establishment of Kalindi College. The department started its journey in an old building with one of its now pioneer members, Ms. Promila Goswami, teaching the students from B. A. (Pass) only. Mrs. Neera Bahadur later joined the Department in 1970 and submitted her Ph. D. thesis on “Differential Manifolds and Riemanian Geometry” in 1979.
- With sincere and dedicated efforts of the founder teachers, the Department was able to start B. Sc. (Gen) in 1979 and later Mathematics (Hons) in 1992. While Dr. Sudha Jain, Ms. Anshu Chotani and Ms. Neelam Bareja joined the Department in 1995, Ms. Charu Khanna (1996), Ms. Anju Rattan (1997) and Dr. Anju Gupta (1997) joined the Department in later years. With the advancement of the course, we now have an excellent faculty of five Associate Professors and eight Adhoc Assistant Professors with Ms. Anshu Chotani as the present Teacher In- charge.
- The Department aims to enable each student with comprehensive study of hard-core Mathematics with adequate theoretical and application based knowledge, along with practical knowledge of computer oriented Mathematical tools. Dedicated efforts and continuous motivation of teachers has produced remarkably excellent results. In various papers, students have secured 100% and in others above 90%. Joint efforts made by the teachers and students together has made a huge gap between the intake admission percentage and the final university results. This trend, which started many years ago, is still being continued.

**2. Scope of the Subject:**

- The students not only grow academically, but the Department also tries to help the students to become strong, confident capable leaders of the future. Every year inter- college paper reading competitions, Mathematical Quizzes, Seminars and Workshops are organized for students and teachers by various eminent professors from across the country. Many students have also won accolades for the college by participating in paper presentation competitions organised at other colleges.

- A Graduate student in B. Sc. (Honors) Mathematics from the college can further pursue academic courses like B.Ed. and P.G. Courses like M. Sc. or M.S., followed by M. Phil or Ph. D. Thus, they can find a promising career in the field of Research or Teaching.
- Students can also take up Professional Courses like MCA or MBA. MCA is the best option for the B. Sc. Mathematics graduates who wish to pursue their career in IT sector and MBA for those who wish to pursue their career in Management field. The students can also explore areas like actuarial sciences, banking, civil services etc.

### 3. Details of the Faculty members

S. No.	Name	Designation	Qualification	Area of Specialization
1	Mrs. Anshu Chotani(TIC)	Associate Professor	M.Phil.	Pure Mathematics
2	Mrs. Neelam Bareja	Associate Professor	M.Phil.	Pure Mathematics
3	Mrs. Charu Khanna	Associate Professor	M.Phil.	Pure Mathematics
4	Mrs. Anju Rattan	Associate Professor	M.Phil.	Pure Mathematics
5	Dr. Anju Gupta	Associate Professor	Ph.D.	Applied Mathematics

### 4. Medium of Instruction: English

### 5. Course Detail:

#### *i) For B. Sc. (H) Mathematics*

#### 1<sup>st</sup> Year

Semester	Core	Generic Elective	AECC
I	BMATH 101: Calculus (Including Practicals) BMATH 102: Algebra	GE- 1: Calculus OR GE- 1: Analytic Geometry and Theory of Equations	Ability Enhancement Compulsory Course-I: English /MIL communications/ Environmental Science
II	BMATH 203: Real Analysis BMATH 204:	GE -2: Linear Algebra OR GE -2: Discrete	Ability Enhancement Compulsory Course-II: English/MIL communications/ Environmental



	Differential Equations (Including Practicals)	Mathematics	Science
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**2<sup>nd</sup> Year**

Semester	Core	Generic Elective	SEC
<b>III</b>	BMATH 305: Theory of Real functions BMATH 306: Group Theory-I BMATH 307: Multivariate Calculus (Including Practicals)	GE -3: Differential Equations (with Practicals) OR GE -3: Linear Programming and Game Theory	SEC-1: LaTeX and HTML (Including Practicals)
<b>IV</b>	BMATH 408: Partial Differential Equations (Including Practicals) BMATH 409: Riemann Integration & Series of functions BMATH 410: Ring Theory & Linear Algebra-I	GE -4: Numerical Methods (with Practicals) OR GE -4: Elements of Analysis	SEC-2: Computer Algebra Systems and Related Softwares (Including Practicals)

**3<sup>rd</sup> Year**

Semester	Core	DSE	DSE
<b>V</b>	Core course-XI: C-11: Metric Spaces Core course-XII: C- 12: Group Theory-II	Discipline Specific Elective- I DSE-1: Numerical Analysis Or DSE-1: Mathematical Modeling and Graph Theory (Both Including Practicals)	Discipline Specific Elective- II DSE-2: Probability theory & Statistics Or DSE-2: Discrete Mathematics
<b>VI</b>	Core course-XIII: C 13 Complex Analysis (Including Practicals) Core course-XIV:	Discipline Specific Elective- III DSE-3: Mathematical Finance Or DSE-3: Bio-Mathematics	Discipline Specific Elective- IV DSE-4: Number Theory Or

	C 14 Ring Theory and Linear Algebra-II		DSE-4: Linear Programming and Applications
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*ii) For Programme Courses*

- *B. A. Prog*

**1<sup>st</sup> Year**

Semester	Core	AECC
<b>I</b>	Calculus	Ability Enhancement Compulsory Course-I: English /MIL Communications/ Environmental Science
<b>II</b>	Algebra	Ability Enhancement Compulsory Course-II: English /MIL Communications/ Environmental Science

**2<sup>nd</sup> Year**

Semester	Core	SEC
<b>III</b>	Analytic Geometry and Applied Algebra	SEC- 1: Computer Algebra Systems (Including Practicals)
<b>IV</b>	Analysis	SEC-2: Mathematical Typesetting System: LaTeX (Including Practicals)

**3<sup>rd</sup> Year**

Semester	DSE	Generic Elective	SEC
<b>V</b>	DSE 1(i) Statistics DSE 1(ii) Discrete Mathematics	GE-1:General Mathematics-1	SEC-3: Transportation and Network Flow Problems (Including Practicals)
<b>VI</b>	DSE II (i) Numerical Methods DSE II (ii) Differential Equations	GE-2:General Mathematics-2	SEC-4: Statistical Software: R (Including Practicals)

- **B. Sc. Physical Science**

**1<sup>st</sup> Year**

Semester	Core	AECC
<b>I</b>	Calculus and Matrices	Ability Enhancement Compulsory Course-I: English /MIL communications/ Environmental Science
<b>II</b>	Calculus and Geometry	Ability Enhancement Compulsory Course-II: English /MIL communications/ Environmental Science

**2<sup>nd</sup> Year**

Semester	Core	SEC
<b>III</b>	Algebra	SEC-1: Computer Algebra Systems (Including Practicals)
<b>IV</b>	Real Analysis	SEC-2: Mathematical Typesetting System: LaTeX (Including Practicals)

**3<sup>rd</sup> Year**

Semester	DSE	SEC
<b>V</b>	DSE -1 (i): Differential Equations (with practicals) OR DSE -1 (ii): Mechanics and Discrete Mathematics	SEC- 3: Transportation & Network Flow Problems (Including Practicals)
<b>VI</b>	DSE-2 (i): Numerical Methods (with practicals) Or DSE-2 (ii): Probability and Statistics	SEC-4 Statistical Software: R (Including Practicals)

**6.Infrastructure: Mathematics Lab Available**



## 7. Research in Department:

S. No.	Name of the Principal Investigator (Co-investigator)	Title of the Project	Names of students
1.	Ms. Neelam Bareja & Dr. Prempal Singh	Mathematical Modeling of Natural Resources and its Impacts on Future Population Growth in India	<b><u>B. Sc. (H) II Maths</u></b> <ol style="list-style-type: none"> <li>1. Ms. Kirti Agarwal</li> <li>2. Ms. Yashika Jain</li> <li>3. Ms. Anshika Naugain</li> <li>4. Ms. Ankita Kumari Sah</li> <li>5. Ms. Muskan Gupta</li> <li>6. Ms. Anita</li> <li>7. Ms. Anamika</li> <li>8. Ms. Rubal</li> <li>9. Ms. Pinky</li> <li>10. Ms. Sonam Yadav</li> <li>11. Ms. Samridhi Kapoor</li> <li>12. Ms. Neha</li> <li>13. Ms. Aparna Yadav</li> <li>14. Ms. Vinika</li> <li>15. Ms. Neha Singh</li> <li>16. Ms. Sonika Kaswan</li> <li>17. Ms. Tanisha</li> <li>18. Ms. Manisha</li> <li>19. Ms. Preeti</li> <li>20. Ms. Jyoti</li> <li>21. Ms. Vandana</li> <li>22. Ms. Himani</li> <li>23. Ms. Deepika</li> <li>24. Ms. Muskan</li> <li>25. Ms. Tamanna</li> <li>26. Ms. Pallav Shikha</li> </ol>



			27. Ms. Anjali
2.	Ms. Anju Rattan & Dr. Abhishek Kumar Singh & Mr. Sanjay Kumar & Dr. Tajender Kumar	Applications of Cryptography	<b><u>B. Sc. (H) III Maths</u></b> <ol style="list-style-type: none"> <li>1. .Monika Yadav</li> <li>2. Mansi</li> <li>3. Prateeksha</li> <li>4. Lakshika Singh</li> <li>5. Ashtha Singh Baghel</li> <li>6. Manvi Surya</li> <li>7. Shivani Sherawat</li> <li>8. Ravina</li> <li>9. Drishti Goel</li> </ol>
3.	Ms. Anshu Chotani & Dr. Inderpal Singh & Mr. Sanjay Kumar & Ms. Garima Gaur	Study on Differential Equation in Daily Life	<b><u>B.Sc. Physical Science I</u></b> <ol style="list-style-type: none"> <li>1. Ishita</li> <li>2. Devika</li> <li>3. Yashvi</li> <li>4. Ghazal</li> </ol> <b><u>B.Sc. Physical Science II</u></b> <ol style="list-style-type: none"> <li>5. Nisha Nainwal</li> <li>6. Harshita</li> </ol> <b><u>B.A. Programme II</u></b> <ol style="list-style-type: none"> <li>7. Rachita</li> <li>8. Neha</li> </ol>

### 8. Highlights of Mathematics Society:

#### Society Convener: Ms. Neelam Bareja

Under normal circumstances, activities of the Mathematics society run throughout the session according to the yearly academic plan with the following tentative programmes. (Provided university session began on time)

Considering the current situation of pandemic, there might be certain changes in the activities, based on the improvement of the situation.

- Orientation of the Department
- Society Office Bearers Selection
- Opening Ceremony
- Webinar/Seminar/ Workshop/ Conference

- Math-e-Magic 2020-2021 (Inter-College Fest)
- Closing Ceremony

## 9. Scholarships and Prizes

S. No.	Name	Criteria for Award
1.	Singh Jee & Co. Prize	Highest marks in B.Sc. (H) Maths Sem I & II
2.	Asha Arora Memorial Prize	Highest marks in B.Sc. (H) Maths Sem I, II, III & IV combined
3.	Shashi Satyapal Prize	Highest marks in B.Sc. (H) Maths Sem V & VI
4.	Students Union Prize	Standing First in B.Sc. (H) Maths Sem I and II
5.	Students Union Prize	Standing First in B. Sc. (H) Maths Sem III & IV
6.	Students Union Prize	Standing Second in B. Sc. (H) Maths Sem I and II
7.	Students Union Prize	Standing Second in B. Sc. (H) Maths Sem III & IV
8.	Students Union Prize	Standing First in B. Sc. (H) Maths Sem V & VI
9.	Students Union Prize	Standing Second in B. Sc. (H) Maths Sem V & VI
10.	Students Union Prize	Standing First in B. Sc. (H) Maths Sem I to VI
11.	Students Union Prize	Standing Second in B. Sc. (H) Maths Sem I to VI

## 10. Distinguished Alumni

- Dr. Ruchika Verma, Associate Professor, Department of Mathematics, Ramjas College, University of Delhi.
- Dr. Neetu Arneja, Assistant Professor (Ad-Hoc), Department of Mathematics, Maitreyi College, University of Delhi.
- Ms. Honey Garg, Assistant Professor (Ad-Hoc), Department of Mathematics, Vivekananda College, University of Delhi.
- Himanshi Dagar, Lovleen Khurana, Mansi Khurana and many more holding key positions in private sectors.
- Bhumika, Somya, Bharti Yadav, Shreya Pandey, Mansi Bajaj, Chanchal Jattran and several others doing research in the field of their interest from various universities.



11. Images











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