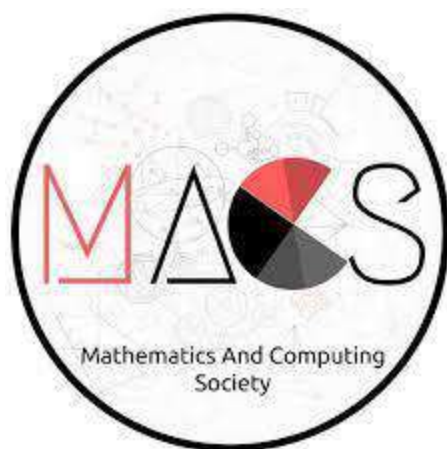# MACS Report
2022-2023

Madhav Prasad, Aditya Maurya

About MCE

The Department of Applied Mathematics is the pride of DTU. The aim of the department is to impart the sound knowledge of Mathematics, Statistics and Computing to the students through teaching and research. The department is achieving its goals with the help of highly qualified faculty. The research output of the department is very impressive and speaks clearly for the quality of work. Faculty members are also actively involved in research, projects and various academic activities.

This program is an amalgamation of Mathematics with Computer Science and Financial Engineering. The curriculum has been designed to meet the needs of sophisticated mathematics for modern scientific investigations and technological developments. The students are being enriched with in-depth theoretical background and practical training in Numerical Computing, Operations Research, Computer Science and Mathematical finance by a team of committed faculty members from the disciplines of Pure Mathematics, Applied Mathematics, Computer Engineering, Information technology and Economics.

MACS

MACS acronym for Mathematics and Computing Society, MACS DTU, the Mathematics and Computing Society of Delhi Technological University is the tavern for the snollygosters and esurient for the profound knowledge of each domain belonging to Mathematics, Computing, Finance etc. It is the official department society with over 200+ member & faculty advisors that helps in providing students with a platform to discover Core knowledge of Applied Mathematics and Computer science subjects. MACS also provides every ardent enthusiast with a platform and incessant orientation to reach to the zenith with its asymptotes. It focuses upon learning through workshops, SIGs, seminars, guest lectures and various symposiums. MACS organizes various events every year with the consortium of Invictus i.e, the tech fest organized by the DTU.

In the past years, MACS has emerged as the most prolific organization with over 250+ active members contributing in various forms to the institute and department. It has emerged as a protuberant plinth for the aspirants under the direction of austere and benevolent boffins. The preponderance upon social media handles viz. Instagram and Facebook have gained gusto by vigorous engagement amongst the apprentices and the MACS. These handles have a combined reach of up to 2000 students belonging to various disciplines.

Our Council

The MACS Council is the coterie of numerous deft engineers who coordinate and work adherently to organize and manage events, meetings and various conundrums in the course of maneuvers hosted by the society. The Council incessantly ensures to heft the accolade and acclamation that the MACS DTU commanded and what was bestowed upon this Council by the forerunners. The Council is constituted by the Secretariat headed by the Faculty Advisor, a professor of Applied Mathematics along with the Student President of MACS. It comprises several posts and duties conferred to the wilful and deserving postulants stipulated through a series of interviews and analyses of past experience and contribution to the society.

Orientation 2022-2023

9th December 2022

On the 9th December 2022. MACS DTU organized its orientation session for freshers that showcased a massive participation of more than 250 enthusiastic freshers.The event took place at SPS9 - Pragya Bhavan. The aim of the event was to provide academic assistance to aspiring students, explaining the purpose and perks of joining MACS, explaining road maps for coding and placements and interaction with seniors. The event started with an introduction of MACS-DTU. Further discussions were conducted about what the society is all about, perks of joining MACS and why you should join MACS. A slide covering the syllabus of applied mathematics was there to help students with their further academics,including slides covering implementation of mathematics and computing in various fields like quantitative finance, machine learning and artificial intelligence. Then came the most awaited section about cracking internships, followed by a discussion of mathematical circle, a recent initiative of MACS, and slides covering past year events conducted by MACS. This was followed by an excellent introduction to programming in Python–held by Mohit Uniyal , Co Founder of Coding Minutes. Basic CS concepts were covered followed by a discussion on data science and analysis and DSA. Then there was discussion about competitions and events conducted by MACS that included the machine learning hackathon and MACS exclusive events like mathletics, mathematics relay and much more. Further slides covered zealous and talented seniors with multiple offers and internship offers The meet winded up after a meeting with seniors session that was both fun and interactive. The event concluded with a positive note and participants showed immense enthusiasm in being a part of society.

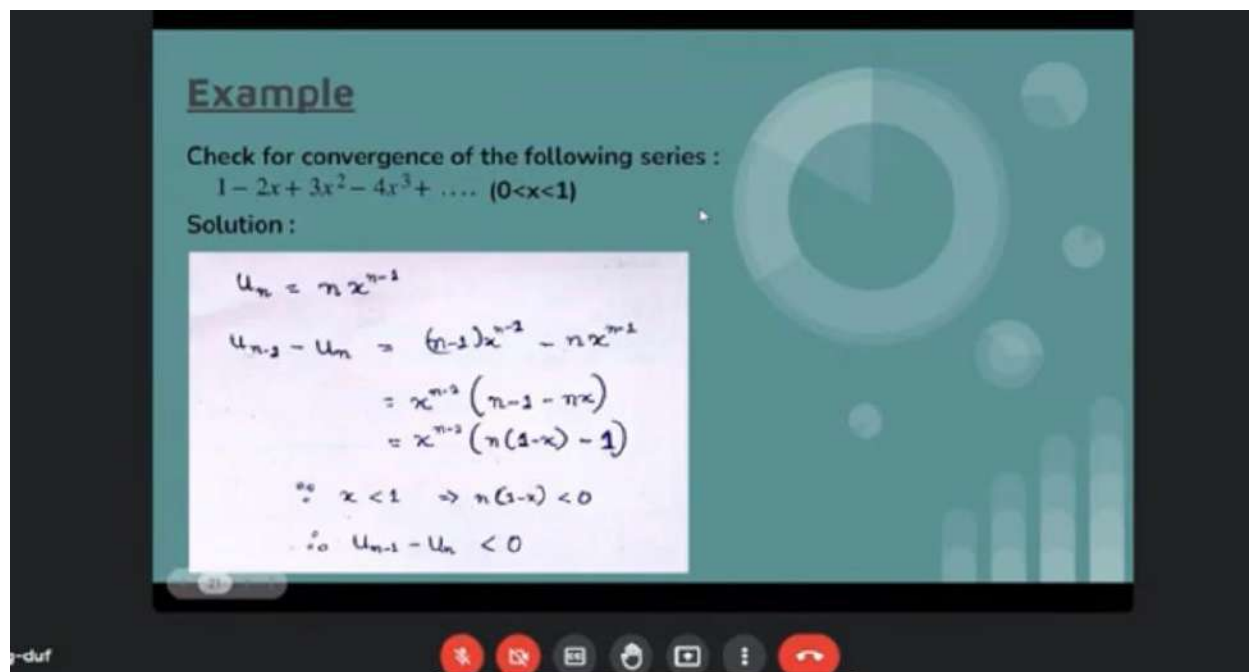**The MACS COUNCIL at Orientation 2022-2023**

MA101: SIG

29th December and 30th December 2022

29th and the 30th of December 2022 marked an eventful and pleasant close for the year. The MACS SIG event took place on Google meet and witnessed a massive participation of more than 100 enthusiastic learners along with shrewd seniors. The events went on for around an hour on both days. The aim of the events was to impart a sound knowledge of the Mathematics and CS mid-semester syllabus to the students through teaching and a discussion of the important PYQs.

Freshers were introduced with the SIG program of MACS and the first unit of MA101 i.e sequences and series was covered ; including discussions about various tests for convergence of infinite series' and a short lesson Taylor and Mclaurin series.

CS FUNDAMENTALS : SIG

31th December 2022

This SIG focusing on introductory CS was extremely packed and successful. The focus was on covering a wide range of topics so that the freshers have a good overview of the topics. First a short lecture on programming and flowcharts were followed by a fascinating discussion on unary , binary operators , conditional statements and so on. The SIG also went into various programming concepts like loops, if - else statements , breaks etc,.
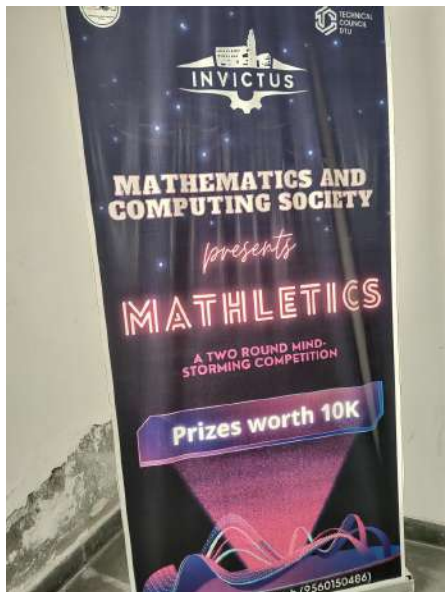
INVICTUS 2023:

Feb 13th ,14th and 15th, 2022

Invictus is the annual technical fest of Delhi Technological University. Invictus 23 was organized on aforementioned days and brought aboard all the technical societies of DTU in this odyssey to make this fest captivating and knowledge enriched by conducting a multitude of brainstorming events.

MACS, the Mathematics and Computing Society of DTU was a major contributor in the success of this fest and led the logistics department. MACS DTU conducted multiple events, and in total, there were 777 registrations. The event, as a whole, was a great success, thanks to the significant number of skilled participants who participated in the various events and exhibited exceptional competence in addressing the challenges presented. We created and managed a total 4 events , namely :

1. Mathletics
2. Chess Warfares
3. Greedy Knight
4. Decyber

Greedy Knight

On 14th Feb 2023, MACS DTU organized the GREEDY KNIGHT event as part of INVICTUS 23. With 218 registrations, the event garnered a remarkable turnout of highly skilled participants who exhibited impressive problem-solving skills in devising effective tactics to overcome the limitations. The event was undoubtedly a resounding success. The game posed a challenge to collect as many coins as possible while maneuvering through a life-sized chessboard as a standard knight would. Each participating group had a time limit of 1 minute. The event offered cash prizes worth 10,000.
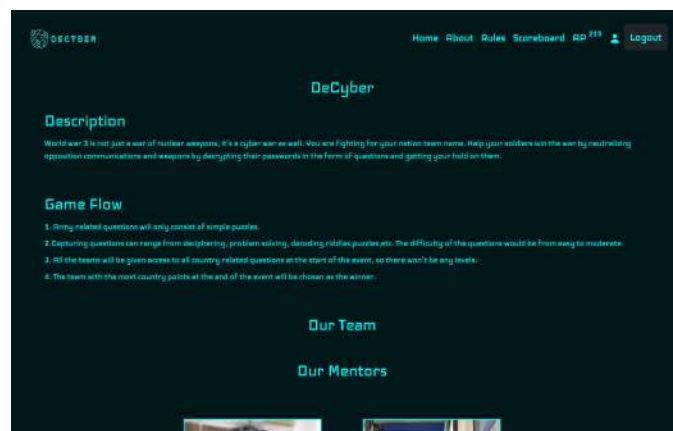
Chess Warfare

On 13th Feb 2023, MACS DTU organized the Chess Warfare event as part of INVICTUS 23. The event attracted an impressive turnout of 245 highly skilled participants who demonstrated exceptional ingenuity in developing effective strategies to overcome the challenges. It was an undeniable success. This was a classic over-the-table chess tournament that was organized very carefully and professionally by the team at MACS-DTU. The players faced-off in 5 successive rounds culminating in a single victor. The event offered cash prizes worth 10,000.

Decyber

On 15th Feb 2023, MACS DTU organized the DeCyber event as part of Invictus 23. Despite the moderate turnout of 163 registrations, the event was a tremendous success, owing to the impressive array of highly skilled participants who exhibited remarkable competence in tackling the challenges presented. The contest featured a virtual battlefield created by the MACS DTU team ; where participating teams defend their nations and defeat their opponents by decrypting passwords and neutralizing enemy communications. The offered the winning teams cash prizes worth 10,000.

DeCyber kicks off in a battle of coding complexities and logical intricacies

Mathletics

On 14th Feb 2023, MACS-DTU, MACS DTU organized A head-scratching and challenging mathematical quiz, as part of Invictus 23. It was a thrill-filled 2 rounds followed by a grand faceoff finale. The event was hosted offline in the Campus between 1PM and 3PM. Despite the modest number of 163 registrations, the event was a resounding success, primarily due to the exceptional caliber of skilled participants who showcased their expertise in addressing the challenges posed. The winners have been awarded a cash prize worth Rs. 10,000. The participants really enjoyed the Competition with participants thanking MACS DTU for an event filled with vigor and enthusiasm.