Principal's Message

St. Aloysius College is a miracle came out of water-logged Kuttanad. The hard work of the people of Edathua under the leadership of St. George Forane Church resulted in the realization of their dreams to uplift the farming community of Kuttanad through quality-higher education. That Department of Mathematics stood hundred percent true to this vision is evident from the academic laurels it brought to the college. It is happy to see that the faculty and students wholeheartedly and single mindedly conducts the journey towards academic excellence. I am also glad to say that the department has always supported the principal and the management for carrying out all developmental activities aimed at the upliftment of the student community. I exhort the students and teachers to continue the good work and scale new heights. Wish you all the best for achieving greater success in your life.

Dr. Saban K.V.

Message from HOD

The Department of Mathematics glories in having secured first rank in BSc Mathematics in MG University. It is also heartening to know that our PG students are excelling in competitive examinations and are clearing the National Eligibility Test in flying colours. Our students have also proved their mettle in extra-curricular activities by securing awards and prizes in the competitions held within and outside the college.

Stride to excellence is a never ending journey which needs to be conducted by students and teachers together. I urge the students to continue this journey towards excellence holding the hands of the teachers of the department. Wish you all the very best!
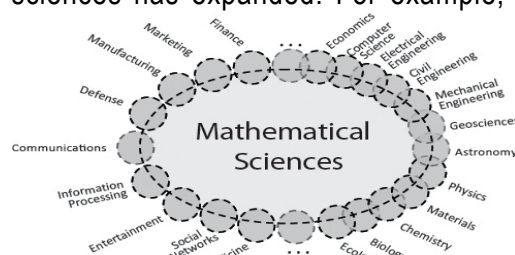
Prof. Kochu Thresiamma Joseph

Ms. Andria Noronha secured University First Rank in BSc Mathematics

Department of Mathematics is in the limelight over Ms. Andria Noronha securing University First Rank in BSc Mathematics in MG University. It is the second time That St. Aloysius College, secured the first rank for a model 1 UG course. The fact that Ms. Andria, a village girlachieved this by competing with more than two thousand students from other colleges of MG University makes her achievement sweeter. Ms. Andria hails from Thakazhy village of Alappuzha district. She is the youngest daughter of Mr. Vincent Harold Noronha and Mrs. Margaret Noronha. She completed her School and Higher Secondary School education in DBHSS Thakazhy. She plans to pursue her Master's in Mathematics.

THE INCREASING ROLE OF MATHEMATICAL SCIENCES IN INDUSTRY

The role of the mathematical sciences in industry has a long history, going back to the days when the Egyptians used the 3-4-5 right triangle to restore boundaries of farms after the annual flooding of the Nile. The subject witnessed a remarkable growth and diversification in the recent period. Even in existing industries, the role of the mathematical sciences has expanded. For example, the

Mathematical Sciences

aviation industry has long used mathematics in the design of airplane wings and used statistics in ensuring quality control in production. Now in the same aviation industry the mathematical sciences are crucial to GPS navigation systems, to simulate the structural soundness of a design, and to optimize the flow of production. Instead of being used just to streamline cars and model traffic flows, the mathematical sciences are now involved in the design of automated vehicle detection and avoidance systems which is the key to automated driving. Statistics has long been a key element of medical trials. Now it is also involved in drug design and in modelling new ways for drugs to be delivered to tumors. The financial sector, which once relied on statistics to design portfolios that minimized risk for a given level of return, now makes use of statistics, machine learning, stochastic modelling, optimization, and neural networks in pricing and designing securities and in assessing risk.

What is most striking, however, is the number of new industries that the mathematical sciences are a part of, often as a key enabler. The encryption industry makes use of the number theory to make Internet commerce possible. The "search" industry relies on ideas from Linear

From the Editor's Desk

The department bids adieu to another year full of activities and achievements and is earnestly welcoming the academic year 2018-19 with new expectations and hopes. Mathematicians are known for their analysis instinct and modelling sequel using the existing information. By documenting the activities and achievements of the past year this newsletter will serve as a tool to introspect and to prospect. The past achievements are stepping stones for further leap into excellence. I sincerely hope that the students will find the newsletter informative and will provide them the joy and pride of being part of a successful voyage. I am sure the coming year also will be a year of achievements and joy. Wishing you all fruitful academic year 2018-19!

Dr. Jubin Antony

Dr. Indulal G. is a recognized PhD Guide of MG University

MG University has recognized Dr. Indulal G. as a research guide in the area of graph theory. He has more than 30 publications in international journals and has presented research articles in numerous national and international conferences. He has delivered an invited talk in the 5th India-Taiwan Conference on Discrete Mathematics held at Tamkang University, New Taipei in Taiwan on 19th July 2017. Currently 5 scholars have joined for research programme under his guidance.

Motivational Talk

Mathematics Association arranged a one day motivational class to all students of the department. Mr. Scaria Thomas, Assistant Professor, Rajadhani College of Engineering and Technology led the motivational class.The class focused on need and ways of building motivation, rules of goal setting and basic training on communication skills.

The Increasing role of Mathematical Sciences in Industry

(Continue from page 1)

Algebra to make the Internet's vast resources of information searchable. The social networking industry makes use of graph theory and machine learning. The animation and computer game industry makes use of techniques as diverse as differential geometry and partial differential equations. The biotech industry heavily uses the mathematical sciences in modelling the action of drugs, searching genomes for genes relevant to human disease, and discovering new drugs and understanding how they might act. The imaging industry uses ideas from differential geometry and signal processing to procure minimally invasive medical and industrial images. Fractional Diffusion Equation is used to design targeted radiation therapies and within medicine itself the new field of computational anatomy enable remote surgery. The online advertising industry uses ideas

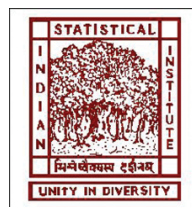# How to get admitted to a postgraduate degree in IIT, ISI or Central University?

The brand, the facilities available, good library facility, career opportunities, a wider world view, the reasons go on for a student to dream of getting admitted to a post graduate programme in a National Institute. It is not so easy to get admitted into these institutes. At the same time perseverance and determination can take you there. Here are the details of Mathematical Sciences PG programme in IITs, ISI and Central Universities.

The admission to PG programme in IITs is based on Joint Admission Test (JAM). JAM examination is fully objective conducted online only. Usually the Online Registration and Application portal will be open in August or September every year and examination will be conducted in January or February. PG programme in Mathematics is available in IITs at Bombay, Delhi, Gandhinagar, Indore, Jodhpur, Kanpur, Madras, Patna, Roorkee, Ropar, Hyderabad, Dhanbad, Bhubaneswar and Kharagpur. PG programme in Statistics is available in IIT Bombay and IIT Kanpur. Admission to integrated PhD prgramme in IISc Bangalore is also based on JAM score.

CUCET, Central Universities Common Entrance Test, an all-India test is being organized by 10 Central Universities for admission to various Integrated/ Postgraduate and Research Programs in these Universities/Institutes. Mathematics PG programme is available in Central Universities in Kerala, Haryana, Punjab, Karnataka, Rajasthan, Jharkhand, South Bihar, Jammu and Kashmir. Statistics PG programme is available in Haryana, Punjab, South Bihar and Rajasthan Central Universities. The online application portal opens in February and the exam is usually conducted in April. The questions are multiple choice and examination duration is 2 hours.

Indian Statistical Institute is another premier institute for PG studies and research in Statistics and Mathematics. Post graduate programme in Statistics and Mathematics is available in ISI centres in Kolkata, Delhi, Chennai and Bengaluru. Admission to the programme is based on performance in written admission tests and subsequent interview. Usually online application starts in February and examination is conducted in May.

STUDY TOUR

Final year degree students of our department together with the faculty members Dr. Jubin Antony and Ms. Emily Kurian went on a study tour to Mysore, Koorg and Waynad from 12th to 17th January 2018.

ONAM CELEBRATION

Departmental celebration of Onam was conducted on 31.08.2017 with traditional gaiety, splendour and enthusiasm. Various fun games were organized by the association and Payasam was distributed. Winners of the fun games were given prizes. Students from the department participated in the inter-departmental Onam Folklore Song and Mavelimannan competitions.

from game theory and discrete mathematics to price and bid on online ads. Statistical techniques and machine learning are used to decide how to target those ads. The marketing industry now employs sophisticated statistical and machine learning techniques to target customers and to choose locations for new stores. The credit card industry uses statistical modeling techniques to detect fraud and denial-of-service attacks. Political campaigns now make use of complex models of the electorate, and election-night predictions rely on integrating these models with exit polls. The semiconductor industry uses optimization to design computer chips and in simulating the manufacture and behavior of designer materials. Thus the mathematical sciences are now present in almost every industry, and the range of mathematical sciences being used would have been unimaginable a generation ago.

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PROFICIENCY PRIZE DISTRIBUTION

Mathematics association honored the academically brilliant students and distributed prizes to them. Trophies were awarded to toppers of University examination in second and final year degree classes.

COLLEGE SPORTS DAY

The annual sports day of the college was held on 23rd February 2018. The department came third in overall points. We were runners up in inter-department Boys Cricket and Girls Football tournaments. Some of the individual prize winners are;

100 mts (Men) – Third Prize - Mr. Sibin T. Varghese (2nd BSc)
200 mts (Men) – Second Prize - Mr. Sibin T. Varghese (2nd BSc)
400 mts (Men) – Third Prize - Mr. Sachin K.S. (2nd BSc)
1500 mts (Men) – First Prize - Mr. Jayasurya R.S. (3rd BSc)
Long Jump (Men) – Second Prize - Mr. Jeffin Sebastian (2nd BSc)
Shot Put (Men) – First Prize - Mr. Midhun R. (1st BSc)
Hammer Throw (Men) – First Prize - Mr. Midhun (3rd BSc)
Javelin Throw (Men) – Second Prize - Mr. Sumith Chandran (1st BSc)
Long Jump (Women) – First Prize - Ms. Jipsa Kurian (1st BSc)

Malayali Sreeman Competition on Kerala Piravi Day
Third Prize – Mr. Midhun R. (3rd BSc)

Fashion Show
First Prize - Mr. Midhun R. (3rd BSc)
Second Prize – Mr. Jubin Joy (3rd BSc)

A.D. Schroff Inter-department Elocution Competition
English – First Prize – Ms. Manupriya M. Pillai (3rd BSc)
Malayalam – Third Prize – Ms. Sariga M.S. (1st BSc)

Exemplar Award
Ms. Manupriya M. Pillai received the coveted Exemplar award given to academically brilliant and well-rounded students of the college

Intercollegiate Dance Competition
First prize in inter-collegiate dance competition conducted at SB College Changanacherry &Second prize in inter-collegiate dance competition conducted at MACFAST Tiruvalla **Mr. Harikuttan B.**

Women's Day
Monchathy – Third Prize – Ms. Jeslin Jose (2nd BSc)
Nasrani Manka – Third Prize – Ms. Sinimol Thomas (1st BSc)
Ms. Aloysius – First Runner-up & Best smile award – Tinu V. Tom (1st BSc)

Malayali Manga Competition in association with Onam Celebration
Third Prize – Anagha S. Nair (1st BSc)

Ecofriendly Product Making Competition in association with Ozone Day Celebrations
Second Prize – Mr. Harikuttan B and Mr. Ashish A. (both 2nd BSc)

Best Outgoing Student
Ms. Andria Noronha received Rev. Dr. Pothanamuzhi Award for Best Outgoing Student from Science Stream

NCC AWARDS
Gold Medal in Tal Sainik Camp Inter Group Competition (NCC Army) – **Mr. Sachin K.S.**

Best Ship Modeller Award at NCC National Integration Camp held at Ezhimala (NCC Navy) – **Ms. Tiji Thomas**

Best Cadet Award at NCC Camp held at Nattakom Govt. College (NCC Navy) – **Ms. Manupriya M. Pillai**

Sports : Mr. Sumith Chandran of first BSc was a member of College Water Polo team which won third prize in the University Championship

Our College Received DST FIST Assistance

Department of Science and Technology has recommended our college for financial support under FIST (Fund for Improvement of S&T infrastructure in Universities &Higher Educational Institutions) programme. The science departments of the college will be provided with financial assistance for improving the teaching quality under this programme.

FRESHER'S DAY

The first year students of the association were given a warm welcome on 29th August 2017. The inspiring words of the mentor fraternity and the friendly attitude of the senior students helped the first year students to develop a positive attitude towards the college and the subject.

ABSCISSA - THE MATHEMATICS FEST

Mathematics association held a one day Mathematics Fest named Abscissa on January 05, 2018. The fest was inaugurated by Prof. Jerome P.V., Vice-Principal. As part of the fest, Paper presentation, Word Puzzle, Gipso Puzzle, Quiz and Treasure Hunt competitions were organized. Ms. Tinu V Tom and Ms. Sariga M.S. of the first year degree received first prize in paper presentation competition. Ms. Hanna Fathima and Ms. SwathyReji Kumar of first year MSc class got the second prize.

COLLEGE ARTS DAY

Mathematics Department came third in total points on College Arts Day
Patriotic Song – First Prize – Ms. Archana Ajith and Team
Classical Dance – Second Prize – Ms. Divya Sudhan (2nd BSc)
Folk Dance – Second Prize – Ms. Priya Saby (1st BSc)

MADHAVA MEMORIAL SCHOLARSHIP EXAMINATION

Our department is the regional centre for students intended to write Madhava Scholarship examination. The scholarship is conducted by NBHM and Tata Institute of Fundamental Research (TIFR). This year 37 Mathematics UG students from 3 different colleges attended the examination. Dr. Indulal G. is the local coordinator of the programme.

ഫേസ്ബുക്കിലെ ഗണിതം

Dr. Indulal G.

എനിക്ക് ഫേസ്ബുക്കിൽ 164 Friends ഉണ്ട്. എന്നിട്ടും എന്റെ timeline ൽ വളരെക്കുറച്ച്, ഉദാഹരണത്തിന് X,Y,Z എന്നിവരുടെ updates കളേ ഞാൻ കാണാറുള്ളൂ. മറ്റുകൂട്ടുകാർ ഫെയ്സ്ബുക്കിൽ എന്തു ചെയ്താലും എനിക്ക് അതിന്റെ notification കിട്ടുന്നില്ല. ശെടാ, അതെന്താ അങ്ങനെ എന്ന് അല്പം ഗവേഷണം നടത്തിയപ്പോഴാണ് ഫേസ്ബുക്കിനു പിറകിലെ രഹസ്യം കുറച്ച് മനസ്സിലായത്. ഇവൻ ആരാന്നാ? ഇവൻ സാക്ഷാൽ ഗണിതം. ഫേസ്ബുക്കിനു പിന്നിലെ ഗണിതമാണ് ഈ മറ സൃഷ്ടിക്കുന്നത്.

അതെങ്ങനെയാണെന്നുള്ളത് എനിക്കറിയാവുന്നതുപോലെ പറഞ്ഞുതരാം

രണ്ടുപേരെ രണ്ടു ബിന്ദുക്കളായി കരുതൂ. എന്നിട്ട് അവർ തമ്മിൽ സൃഹൃത്തുക്കളാണെങ്കിൽ അവരെ ഒരു വരകൊണ്ട് യോജിപ്പിക്കൂ. ഇപ്പോൾ കിട്ടിയ ചിത്രത്തിനെ നാം ഗ്രാഫ് എന്നു വിളിക്കുന്നു. ഇങ്ങനെ 10 സുഹൃത്തുക്കളുണ്ടെങ്കിലത്തെ ചിത്രം മനസ്സിലായല്ലോ അല്ലേ?

പക്ഷേ എ യും ബിയും തമ്മിലുള്ള സൗഹൃദം പോലെ ദൃഢമായിരിക്കുമോ ബി യും സി യും തമ്മിലുള്ളത്? അല്ലെങ്കിൽ എയ്ക്ക് ബിയോടുള്ളതുപോലെ അടുപ്പം ബിയ്ക്ക് എയോടു കാണുമോ? ഫേസ്ബുക്കിലെ സൗഹൃദദൃഢത അളക്കപ്പെടുന്നത് ലൈക്കുകളുടേയും കമന്റുകളുടേയും എണ്ണത്തിൽ മാത്രമാണന്ന് ഓർക്കുക. അതുകൊണ്ടാണല്ലോ ഇതുവരെ അറിയാത്തതും മിണ്ടിയിട്ടില്ലാത്തതുമായ അയൽവാസി പോലും ഫേസ്ബുക്കിൽ ക്ലോസ് ഫ്രണ്ടായിരിക്കുന്നത്.

അപ്പോൾ ഈ സൗഹൃദദൃഢതയെ Facebook Quotient (FQ) ഗണിതപരമായി നിർവചിക്കുകയാണു ഫേസ്ബുക്ക് ചെയ്യുക. ഉദാഹരണത്തിന് എ ഒരാഴ്ചയിൽ ബി യ്ക്ക് 30 ലൈക്കും 20 കമന്റും നൽകി തിരിച്ച് ബി യ്ക്ക് 40 ലൈക്കും 10 കമന്റും.

അങ്ങനെയാണെങ്കിൽ a-b like quotient 30/70=3/7

a-b comment quotient 20/30=2/3

അപ്പോൾ

a-b facbook quotient FQ = (3/7 + 2/3)/2=23/42=0.55

ഇതുപോലെ b-a FQ = 19/42=0.45

അപ്പോ FQ കുറഞ്ഞിരിക്കുന്ന ബന്ധങ്ങൾ സ്വാഭാവികമായും താൽപര്യമില്ലാത്തതെന്ന് ഫേസ്ബുക്കിന്റെ ഗണിതവൽക്കരണം മനസ്സിലാക്കുകയും നേരത്തേപറഞ്ഞ വരയിലൂടെയുള്ള വിവരകൈമാറ്റത്തിനെ മന്ദീഭവിപ്പിക്കുകയും അങ്ങനെയുള്ളവരുടെ പോസ്റ്റുകൾ തമ്മിൽകാണാൻ ഇടവരുത്താതിരിക്കുകയും ചെയ്യുന്നു.

ഏതെങ്കിലും ഒരുവശത്തെ (FQ) കൂടിയിരുന്നാൽ ആ ആളിന്റെ പോസ്റ്റുകൾ ഫേസ്ബുക്ക് കൊണ്ടുവന്നു മുന്നിൽ തരും. പക്ഷേ നാം അതിൽ ലൈക്കുകളോ കമന്റോ കൊടുക്കുന്നില്ലെങ്കിൽ (FQ) കുറഞ്ഞ് ആ friend നമുക്ക് tiemline ൽ അപ്രത്യക്ഷനാകും.

ഗ്രാഫ് തിയറി എന്ന നവീനശാഖയുടെ അതിൽത്തന്നെ ഫസി ഗ്രാഫ്തിയറി എന്ന ഭാഗത്തിന്റെയും, നമ്പർ തിയറി, ഓപറേഷൻസ് റിസേർച്ച്, സ്റ്റാറ്റിസ്റ്റിക്സ്, artificial intelligence എന്നിവയുടെയും വിസ്മയകരമായ ഇടപെടലുകളാണു ഫേസ്ബുക്കിന്റെ പ്രായോഗിക ഉപയോഗസൗകര്യത്തിനു പിന്നിൽ. ആബാലവൃദ്ധരുടെ biological extension ആയ സോഷ്യൽ നെറ്റുവർക്കുകളിലെ ഗണിതസാന്നിധ്യം അതിഗംഭീരം തന്നെയെന്ന് ആരും സമ്മതിക്കും.

NET Qualifiers

1. Ms. AryaChandran - NET & JRF (2014-16 batch)
2. Mr. Salu S.–NET & JRF (2013-15 batch)
   had cleared NET last year also
3. Mr. DeepuT.D.–NET (2010-12 batch)

Mathematics Association Inauguration

The meeting of teachers and students selected Prof. Deena C. Scaria, Mr. Bijo Gregory and Ms. Andria Noronha as the President, Secretary and Joint Secretary of Mathematics Association respectively. The formal inauguration of Mathematics association was held on 29th August 2017 in Fr. Punnappadom Hall. Dr. Mathews M. George, Vice Principal, Providence College of Engineering, Chengannur was the chief guest. Association president Prof. Deena C. Scaria presided over the function. Principal Dr. Saban K.V. delivered felicitation address.Ms. Andria Noronha welcomed the gathering and Ms.VidhyaVijayakumar proposed a vote of thanks. After the inauguration Dr. Mathews M. George led a seminar on "Introduction to Fuzzy logic and its Applications", which was very informative, brainstorming and was much appreciated by the students.

MANUSCRIPT MAGAZINE

This year Mathematics Association released a manuscript magazine named "Prathidwani". Ms. Manupriya M. Pillai served as the editor of the manuscript magazine. Ms. Tiji Thomas and Ms. Archana Ajith were the sub-editors and Mr. Harikuttan B and Ms. Divya Sudhan designed the pages. The magazine was released by college Vice Principal Prof. Jerome P.V.

CHRISTMAS CELEBRATION

Christmas was celebrated by the Mathematics association on 22.12.2017. The Christmas message was delivered by HOD Prof. Kochu Thresiamma Joseph and Christmas cake was distributed. Students of the department won prizes in all the inter-departmental competitions organized by CSM unit of the college.

Angel Competition – First Prize - Ms. Bhavitha Lekshmi (1st BSc)
Greeting Card Making – First Prize – Mr. Harikuttan B. and Ms. Divya Sudhan (both 2nd BSc)
Christmas Carol – First Prize – Archana Ajith and Team
Star Making – 2nd – Mr. Sibin T Varghese & Team
Crib Making Competition – Second Prize – 2nd Year BSc Students