

**Department of B.Sc. Mathematics, Statistics, Computer Science – Report - 2013-14**

B.Sc. Maths, Stats & Comp.Sci.	90 %
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**Department of Maths, Statistics & Computer Science**

Dr. K. Vijayalakshmi has been nominated as a member of the Board of Studies at St. Francis College for Women, Begumpet, Hyderabad.

Dr. K. Vijayalakshmi presented a Lecture on “Riemann Integrals” at Andhra Mahila Sabha Arts & Science College for Women, Hyderabad on 24-2-2014.

Dr. K. Vijayalakshmi got grant of rupees 2,65,000 for minor research project from UGC entitled “Combinatorial techniques for advanced counting” for the year 2013-14 in the month of March 2014.

Dr. K. Vijayalakshmi published a research article “Properties of Semi Primitive roots” in the IOSR Journal of Mathematics. ISSN; 2278-5728 Vol. V, Issue 4 January – February 2013.

Ms. U. Swathi, a final year student attended a three weeks workshop on “Mathematics training and Talent Search programme (MTTS)” from 27 May to 22 July 2013 at Punjab University, Chandigarh. The workshop was funded by NBHM.

- Students of B.Sc. Maths, Stats & Computer Science worked with DIVYA DISHA, a non-profit Organisation which works for the empowerment of slums, in which they made a detailed survey in 10 slums on 9, 10 and 11 January 2014.

## **DEPARTMENT OF MATHEMATICS, STATISTICS & COMPUTER SCIENCE**

### **DEPARTMENTAL ACTIVITIES - 2014-15**

#### **I. Departmental Activities:**

##### **(a) MATH ORIGINS 2014**

The Department of Mathematics and Statistics and Computer science organized a two day seminar on 1<sup>st</sup> and second December 2014 at Inigo hall the event flagged off with a prayer song AT 10.00AM ON 1ST DECEMBER.

**Objective:** To improve understanding of the nature of mathematics: what is important, how it is practiced, how mathematical validity is determined, mathematics learning, and mathematics teaching as problematic and to develop an inquiry approach to and an ability to reflect on these domains.

**Report:** The Inaugural ceremony was hosted by Mr. Sai Krishna and Abhishek Bakshi of DMSCS. The event was made glorious with the presence of Pf. M. V Ramana Murthy, Head Department of Mathematics, Osmania University along with the principal Fr.K.S.Casimir. The event was moved further by the lightening of lamp by the chief guest Pf. M. V Ramana Murthy,, Principal and the lecturers of the department. After the welcome address by the principal Dr. K. Vijayalakshmi, Head, Department of MSCS presented departmental report. Mr. Marutiram has given a detailed introduction about the chief guest Pf. M. V Ramana Murthy. The I session came to an end by the inaugural address by the chief guest Pf. M. V .Ramana Murthy. Session II of the day one started at 11.30 am with an informative talk on “Applications of Statistics in Pharmaceutical industry and software techniques” By P. Promod Kumar reddy manager of Dr.reddy’s lab. The talk continued for one hour which was made interesting by friendly interactions with the students and by giving real world instances.

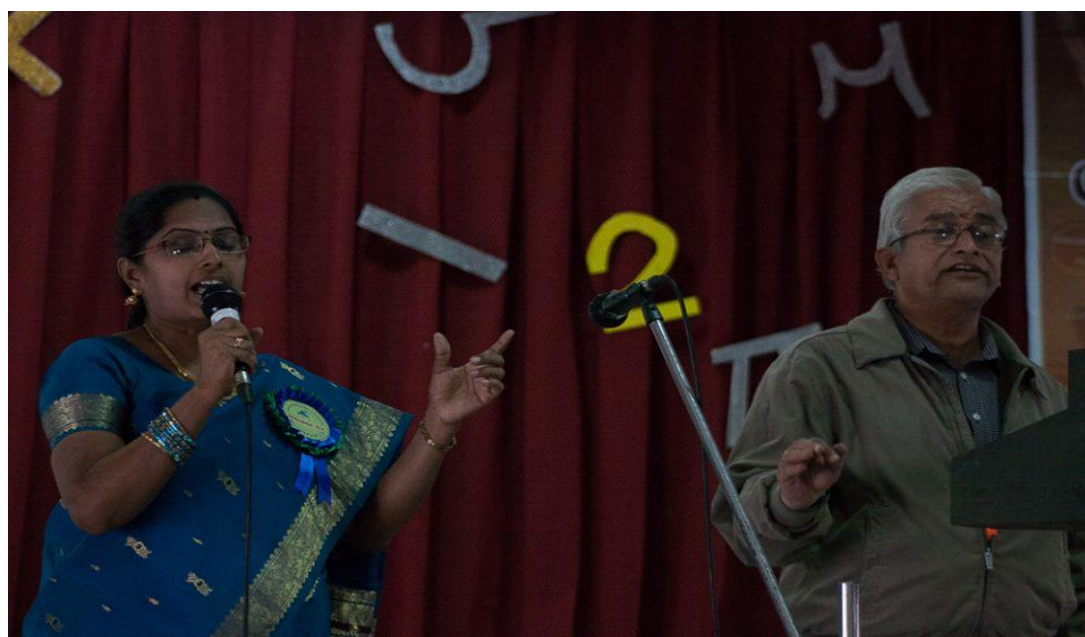
The Session III started at 2.00 pm a talk on “Basics of Statistics and hypothesis testing”was given by Pf.V.V.Haragopal, Department of Statistics, Osmania University. The last session of the day ended with a quiz competition which was actively participated by the students of various colleges divided in to seven groups.

First prize won by *Mohit, Sanjayand Vikas* the first year BBA students of Loyola academy.

The second prize won by Rashab, Akhil and Prashanth the Second year Bcom students of Loyola academy. The third prize won by Abhijit and pranay from Bhavans College. The other participants of quiz were from St. Ann's College, Mehdiapatnam and Sri Sai Degree College, Dilsukhnagar.

The second day of the event started with a prayer song followed by a lecture on "Productive Analytics" By. Mr.B.Prasad lecturer in statistics Loyola Academy. A competitive session of presentations by students of various colleges was held at 11.00 am. In this competition Abhijit ,Bhavan's college,Sainikpuri got Ist prize, II and III were got by students of St. Ann's College. Next a mock test was conducted to scrutinize the participants of Treasure hunt in to 5 teams. In this event ABBA students of Loyola got first prize and II prize won by Students of Bhavan's college. At 2.00pm A talk on "Solid geometry and visualization of solids" was given by Prof C.Govardhan, Department of Mathematics, Osmania University. The two day seminar was concluded with a valedictory function in which the participants were congratulated with the distribution of certificates and the winners were felicitated with momentous and certificates. Dr. K. Vijayalakshmi summoned the two day event with a vote of thanks.





## II. GUEST LECTURE:

A guest lecture was arranged for Students of MSCS on “Applications on Statistics on 19<sup>th</sup> July 2014.

**Objective:** To Create awareness among the students about Applications of Statistics in Various Fields.

**Report:** Prof. P.V. Sundaranand Prof. P.V. Sundaranand, CR.Rao advanced Institute of Mathematics, Statistics and Computer Science, Gachibowli, Hyderabad, delivered a lecture on Statistical Quality Control to all the three year students of MSCS on 19<sup>th</sup> July 2014 at P.G. Seminar Hall, Loyola Academy.

He spoke on different aspects of Statistical Quality Control.

Since the organizations have lagged behind manufacturers in the Use of Statistical Quality Control, Statistical measurements are required and it is more difficult to measure the Quality of Service. He focused on the following points;

- Service provides more intangible products.
- Perceptions of quality are highly subjective.

A way to deal with service quality is to devise quantifiable measurements of the service element. He quoted the following Examples

- Check in time in a Hotel
- Number of complaints received per month at a restaurant
- Number of telephone calls before a call is answered
- Acceptable control limits can be developed and charted.

Professor explained the wide applications of Statistical Quality Control in different organizations.





### III. Staff Achievements:

- ❖ Dr. K. Vijayalakshmi published a research paper entitled “Existence of Semi Primitive root Mod  $p^n$ ” in IOSR Journal of Mathematics p-ISSN2319-765X, Vol.11, Issue2, ver. II (March- April 2015), PP14-17.
- ❖ Dr.K. Vijayalakshmi et al. published a paper entitled “ Adoption of Statistical techniques in automation process of Physiological parameters” in IOSR Journal of Engineering Vol.5, Issue1, January 2015.
- ❖ Dr.K.Vijayalakshmi has participated in the two day TEQIP workshop on “Functional analysis and Applications” held at IIT, Hyderabad during December 23-24, 2014.
- ❖ Dr.K.Vijayalakshmi has participated in the Ramanujan Memorial Symposium in Mathematics and its Applications (RMSMA 2014) held on 22<sup>nd</sup> December 2014 the Department of Mathematics, IIT, Hyderabad.
- ❖ The Department of Mathematics and Statistics and Computer science organized a two day seminar “Math –Origin” on 1<sup>st</sup> and 2<sup>nd</sup> December 2014.
- ❖ Dr.K.Vijayalakshmi has participated in AGBA’s 11th Annual world congress held at Department of Management Studies Auditorium IIT, Delhi on November 20-23, 2014.
- ❖ Mrs.Shailaja has given a guest lecture on “ANOVA & Design of Experiments” at Andhra Mahila Sabha Degree College Hyderabad on 18-9-2014.
- ❖ Dr.K. Vijayalakshmi has attended a tele-conference on “Groups” for UG students at Dr.B.R.Ambedkar open University, Hyderabad which was telecasted in Saptagiri Doordarshan channel on March 30<sup>th</sup> 2014 from 2.00 pm – 3.pm
- ❖ Dr.K. Vijayalakshmi has given a video lecture on “Uniform Boundedness Principle” for P.G.Students at Dr.B.R.Ambedkar open University, Hyderabad which was telecasted in Saptagiri Doordarshan channel for 20 minutes from 5.30 am – 5.50 am on May 30<sup>th</sup> 2014.

### **Students Achievements:**

1. Students of DMSCS got First prize in Ad-mad in Resonance 2014.
2. Students of DMSCS Got Overall shield in Sports and Games for the year 2014-15.





## ***DEPARTMENT OF B.Sc MATHEMATICS, STATISTICS & COMPUTER SCIENCE***

### ***Departmental Report 2015-16***

#### ***Departmental Activities***

Department of Mathematics, Statistics and Computer science organized a guest lecture to the all the three years on “Applications of Mathematics” on 22<sup>nd</sup> August 2015 at 2:00 pm in the P.G. Seminar Hall, Loyola Acvademy. The speaker is Dr.N. Kishore Kumar, Associate Professor, BITS, Hyderabad.

**REPORT:** The speaker focused on the following topics of Mathematics:

- ✓ Real Analysis
- ✓ Linear Algebra &
- ✓ Well posed IVP [Initial Value Problem]

Real analysis was the first topic discussed, which explained the terms sequence of real numbers, sub sequence, limit of a sequence, limit of a function, Euler’s method with examples. Then followed by basics of Linear Algebra [LA] the terms linear system, SVD [Singular Value Decomposition] with live examples and the version by “Hadamard” which explains about the terms existence, uniqueness and stability there by constitute well posed IVP various example problems were also explained and also problems were given for practice.

**OUTCOME:** Dr. Kishore Kumar made the entire session an interesting with his efforts towards application of Mathematics. Students were enriched with the Knowledge given by him.





### Staff Achievements:

- ❖ Dr. K. Vijayalakshmi presented a paper titled “Construction of BIBD’S using Quadratic residues” at UGC sponsored one Day National Conference AIMS-2015 on 28-11-2015, organized by Department of Mathematics & Statistics, K.B.N College, Vijayawada, Andhra Pradesh.
- ❖ Dr. K. Vijayalakshmi published a research paper entitled “Construction of BIBD’s using Quadratic Residues” in IOSR Journal of Mathematics e-ISSN: 2278-5728, p-ISSN: 2319-765X. Volume 11, Issue 6 Ver. V (Nov. - Dec. 2015), PP 77-82, Impact factor 1.794
- ❖ Mrs. Navatha submitted her M.Phil work to the department of Statistics, Osmania University, Hyderabad and finished her pre-Viva on 23<sup>rd</sup> September 2015.
- ❖ Dr. K. Vijayalakshmi published a research paper entitled “Existence of Semi Primitive root Mod  $p^a$ ” in IOSR Journal of Mathematics p-ISSN 2319-765X, Vol.11, Issue2, ver. II (March- April 2015), PP14-17.

- ❖ Dr.K. Vijayalakshmi has attended a Tele-Conference on “Hilbert Spaces” for PG students at Dr.B.R.Ambedkar open University, Hyderabad which was telecasted in Yadagiri Doordarshan channel on April 26<sup>th</sup> 2015 from 2.00 pm – 3.pm
- ❖ Dr.K. Vijayalakshmi was appointed as Board of Studies member on 10<sup>th</sup> June 2015 at Bhavan’s Vivekananda College of Science, Humanities & Commerce, Sainikpuri, Secunderabad.

### **Students Achievements:**

- ❖ Ms.P. Anjusree Krishnan student of DMSCS( R.No.2416) Participated in Level O of Mathematics Training and Talent Search Programme(MTTS) (Funded by NBHM) organized by Goa University, Goa( May11-June06,2015).



## **DEPARTMENT OF MATHEMATICS, STATISTICS & COMPUTER SCIENCE**

### **Departmental Report 2016-17.**

#### **Departmental Activities:**

#### **I. ONE DAY NATIONAL SEMINAR “APPLICATIONS OF MATHEMATICS TO CRYPTOGRAPHY”.**

The Department of Mathematics, Statistics & Computer Science organized a one Day National Seminar on “Applications Of Mathematics to Cryptography” on January 6<sup>th</sup> 2017 in collaborations with Departments of Computer Science & Engineering, Computer Systems & Engineering, Computer Data Science & Data Analytics Engineering.

#### **OBJECTIVE**

The objective of the seminar is to bring together the leading mathematicians and young researchers across the country on a common platform and to discuss and learn about the recent advances in mathematics and its applications to cryptography.

**Report:** The one day national seminar on “Applications of Mathematics to Cryptography” jointly organized by the departments of Mathematics, Statistics & Computer Science; Computer Science & Engineering ; Computer Systems & Engineering and Computer Data Science & Data Analytics Engineering was held on Friday, 6 January 2017 at Loyola Academy Degree & PG College was inaugurated by Dr.B.L.S Prakasa Rao. The seminar was presided over by Rev.Fr Dr.K.S.Casimir SJ, Principal, Dr.K.Vijayalakshmi, Guest speakers Dr.L.Praveen Kumar, Prof.Ramana Murthy and Dr.C.H.Rupa and other invitees. The programme commenced with the prayer song preceded by lighting of the Ceremonial lamp by the principal, chief guest and other dignitaries. The welcome speech was given by Mrs.V.Theresa Vinayasheela. The welcome address was presented by Rev.Fr Dr.K.S.Casimir SJ, Principal who formally welcomed the eminent guest and mentioned about the scope of Mathematics, Statistics and Computer Science in daily life. He ended his welcome address with a warm note, “Every student should know how to tie what you learn in every aspect of your life.” The departmental report was presented by Dr.K.Vijayalakshmi highlighting the achievements of lecturers and students of these departments. Mr.V.Harsha Sastry introduced the chief guest Dr.B.L.S.Prakasa Rao to the gathering. Dr.B.L.S.Prakasa Rao while addressing the gathering proclaimed that he was



immensely impressed by the beauty of our campus. He also stated that this is the Golden Age for Statisticians. He gave a brief description about Cryptography, hacking, message confidentiality types of cryptography, its applications and RSA Algorithm. He concluded his speech with the note that there are ample opportunities for the statisticians. Entailing the bouquet presentation to the honorable chief guest, the Vote of thanks was proposed by Mr.V.Jagadish which was the end of the inaugural session.

The second session began with the introduction of the Guest speaker Dr.Praveen Kumar Lavudi by P.S.R Malathi. He addressed the gathering and started his speech with a note given by the great mathematician Srinivasa Ramanujan, “An equation means nothing to me unless it expresses a thought of God.” He explained in detail about Elliptical Cryptography and applications of elliptic curves. He wished the gathering a Happy New Year ‘2017’ using Ramanujan Primes. He concluded with a note, “Think Analytically, Prove Algebraically.”

In the next session, Mrs.S.Shobha Rani introduced the key note speaker Prof.Ramana Murthy. He addressed the gathering and began his session titled, “The role of Mathematics in real world/time applications. He explained the meaning and role of mathematics, real world problem and examples like data intercepts on fly, hacking the website, cracking password and solution or algorithms to tackle the real world problem. He also explained in brief about the problems in Financial Security and Economic security. He ended with a note that data security is depended on Number Theory and Algebra. So, Mathematics is required in every aspect of life.

The afternoon session commenced with the introduction of Guest speaker Dr.C.H.Rupa by Dr.K.Vijayalakshmi. Dr.C.H.Rupa addressed the gathering and began her session titled “Security Risks Assessment and Management. She stated about the role of mathematics, focus of security analyst on Risk Assessment, Vulnerability Assessment and Defense Planning. She explained the assets of security like confidentiality, integrity; availability, authentication, digital sign and access control & non repudiation. She made her session very lively by narrating the security and encryption techniques in the form of a story and ended her session.

After the interactive session by Dr.C.H.Rupa, Prof.Shanti Priya from Bhavan’s Vivekananda College presented a paper on “Cipher in Cryptography Matrix Approach.” She gave a brief description on Hill Cipher Algorithm, role of matrix as Cipher in encryption & decryption, residue matrix, congruence, triangular matrix-modular arithmetic and ended her session giving a brief account on encryption of text. Here comes the end of all sessions.



The valedictory ceremony was hosted by Dr.Jasmin Regila Rani. The ceremony was presided over by Rev.Fr K.Anil Kumar SJ, Vice-Principal; Dr.N.Maria Das and Dr.K.Vijayalakshmi. All the participants and the lecturers of the departments who organized the seminar were felicitated with certificates by the dignitaries. The programme culminated with the National Anthem.

**Reviews:** The Seminar was Useful for research scholars who are working in the field of Number Theory and Cryptography.

**Outcome:** The seminar was a success, and the knowledge gained was truly useful to its audience for their intellectual enhancement as well as to gain expertise in the field.

Total 6 Research papers were presented by lecturers from various colleges from Hyderabad and Vijayawada. All the papers including the proceedings of the seminar were published with ISSN Number 978-93-87298-07-1











- ❖ The students have conducted an enactment on the theme “HUMAN RIGHTS” on Thursday Dec-08<sup>th</sup> 2016. The theme was to promote the social cause of spreading awareness about “HUMAN RIGHTS”. The students turned up in large number to acknowledge the skit.
- ❖ Department have conducted a programme on **Career guidance skills** on 27<sup>th</sup> July 2016. The resource person for the event was Ms. Sheena Virmani, Admission manager at Many – The Princeton Review.
- ❖ Department conducted a one day workshop on Internet of Things on 9th December, 2016 for final year degree students. The resource person for the event was Mr. Surya Kompella, Director, Kryative Edge.
- ❖ Department conducted a two day workshop on ETHICAL HACKING on 14th and 15th December, 2016, for second year degree students of both the departments. It was conducted in two sessions which included the practical hands on experience. The resource person for the event was Mr. Vikas Jain, Cyber Shield Services, Hyderabad.
- ❖ Department organized a seminar on Networking on 10th January 2017 for third year students of both the departments. The speakers are from Golars Network who gave a brief insight on how networking plays a vital role in organization.

- ❖ Department organized a session on career guidance on 30<sup>th</sup> January, 2017 for final year students of both departments. The resource persons are Mr.Chris, Mr.Justin Spencer and Mr.Justin Howell who briefed the students on various M.S programmes offered by Linden wood University, Harrisburg University and Ottawa University.

## II. Staff Achievements:

- ❖ Dr. K.Vijayalakshmi Delivered a guest lecture on “**Riemann Integral**” in Real Analysis for B. Sc Mathematics students at Little Flower Degree College, Hyderabad on 6<sup>th</sup> August, 2017.
- ❖ Dr. K.Vijayalakshmi Participated in the Three day International Conference on” Global insurance: Practices and Outlook” held on 29-31 July 2017 organized by Department of Commerce, Osmania University, Hyderabad.
- ❖ Dr. K.Vijayalakshmi Participated in the Two day National Conference on” Recent advances of Mathematical Techniques in Science & Engineering” held on 30-31 July 2017 organized by Department of Mathematics, Osmania University, Hyderabad.
- ❖ Dr. Shakira Sultana participated in the Two day National Conference on” Recent advances of Mathematical Techniques in Science & Engineering” held on 30-31 July 2017 organized by Department of Mathematics, Osmania University, Hyderabad.
- ❖ Mrs.K.Ketana participated in the Two day National Conference on” Recent advances of Mathematical Techniques in Science & Engineering” held on 30-31 July 2017 organized by Department of Mathematics, Osmania University, Hyderabad.
- ❖ Dr. K.Vijayalakshmi is one of the author of the Text book “Mathematics –II” published by Telugu Akademy, Hyderabad which was released on 21-6-2017. This book is published in Both English and Telugu medium.
- ❖ Dr.K. Vijayalakshmi Completed Minor research project titled “Combinatorial techniques for Advanced Counting” of UGC worth Rs.2,60,000 in the year 2016 for duration of two years.
- ❖ Dr.K. Vijayalakshmi delivered a guest lecture on “**Hahn Banach Theorem**” in Functional Analysis and “**Mapping by Elementary functions**” in Complex analysis for M.Sc Mathematics Students at Andhra Mahila Sabha Degree College, Hyderabad on 16<sup>th</sup> March, 2017.
- ❖ Dr.K. Vijayalakshmi delivered a guest lecture on “**Riemann Integral**” in Real Analysis for B. Sc Mathematics students at Andhra Mahila Sabha Degree College, Hyderabad on 6<sup>th</sup> March, 2017.
- ❖ Mrs. M.Shailaja delivered a lecture on “Time series analysis” at the Department of Statistics, Kakatiya University, Warangal, on 25 - 26<sup>th</sup> November 2016.



- ❖ Dr.K. Vijayalakshmi delivered a guest lecture on “Urysohn’s Imbedding theorem” at St.Ann’s Degree College, Mehdipatnam, Hyderabad on 26<sup>th</sup> October, 2016.
- ❖ Dr.K.Vijayalakshmi was appointed as external examiner for St.Francis Degree College, Begumpet, Hyderabad, Dr. B.R. Ambedkar Open University, Hyderabad and St.Ann’s Degree College, Mehdipatnam, Hyderabad.
- ❖ Dr.K. Vijayalakshmi delivered a guest lecture on “Real Analysis and Functional Analysis” at Andhra Loyola College, Vijayawada, Andhra Pradesh on 15<sup>th</sup> October, 2016.
- ❖ Dr.K. Vijayalakshmi was appointed as Board of Studies member for two years at Osmania University College of Science, Osmania University, Hyderabad.
- ❖ Dr.K. Vijayalakshmi Presented a paper titled “A Special Discrete Logarithm Problem” at a one Day National Seminar on “Applications Of Mathematics to Cryptography” on January 6<sup>th</sup> 2017 Jointly Organized by the Departments of Computer Science & Engineering, Computer Systems & Engineering, Computer Data Science & Data Analytics Engineering, Loyola Academy , Old Alwal, Secunderabad..
- ❖ Dr.K. Vijayalakshmi Presented a paper titled “Finite Market Models” at 2<sup>nd</sup> international conference on Emerging Strategies for Business Advancement (ICESBA-2016) 19<sup>th</sup>& 20<sup>th</sup> August 2016 organized by Department of MBA, Malla Reddy Engineering college for women, Maisammaguda, Dhulapally, Secunderabad, Telengana.
- ❖ Dr.K. Vijayalakshmi Published a research paper entitled “Implementing Innovative assessment methods in Undergraduate mathematics” in IJLRET, ISSN: 2454-5031, Volume 02, Issue 5 May 2016 Impact factor 2.6.
- ❖ **Mrs.M.Shailaja** has registered for Ph.D in the Department of Statistics, Kakatiya University ,Warangal.
- ❖ **Dr. Shakira Sultana** published a research paper entitled “Kuppers-Lortz instability in rotating Rayleigh-Bernard convection in a porous medium” in Meccanica An International Journal of Theoretical and Applied Mechanics ISSN: 0025-6455. Volume 48, Number 5, (May 2013), impact factor 1.815.
- ❖ **Dr. Shakira Sultana** published a research paper entitled “Kuppers-Lortz instability in rotating Thermohaline Convection with Finite Prandtl Number” in Journal of the Physical Society of Japan ISSN: 0031- 9015(print) ;1347-4073 )web(, vol. 77no.10 .October 2008
- ❖ **Dr. Shakira Sultana** attended a three days workshop on “ Applications of Numerical Methods in Science and Engineering organized by the Departments of Mechanical Engineering and Mathematics, University College of Engineering, Osmania University, Hyderabad.on 21-23 October 2016

- ❖ **Dr. Shakira Sultana** participated in National Conference on “Recent Advances in Fluid Mechanics” organized by the Department of Mathematics, Osmania University, Hyderabad, on 30-31 May 2016.

**Maintenance Of MoU:**

1. NBHM is sending books every year to our library From 2005 onwards.

**Programmes for Advanced Learners:**

- ✓ Students are encouraged to attend MTTS programmes. Ms. Bindu Babu Student of NMSCS (24003) has been Selected for MTTS(Mathematics Training and Talent Search Programme 2017)
- ✓ 20 Students from Department of MSCS were participated in the “International Conference on “The Role of Proof in Mathematics and Data Analytics- Business Applications” held on 6<sup>th</sup> February 2017 At St. Ann’s College For Women, Hyderabad, Telangana, India.
- ✓ G.S.S.Manasa Student of DMSCS participated in **Spell Bee** Conducted by the department of B.Com General, Loyola Academy, Secunderabad.
- ✓ 9 Students from Department of MSCS were participated in the “National Conference on “Applications of Mathematics - Data Science” held on 26<sup>th</sup> August 2017 At St. Ann’s College For Women, Hyderabad, Telangana, India.
- ✓ G.S.S.Manasa Student of DMSCS won First prize in **Turn Coat** event at TECHNOID held at Loyola Academy, Secunderabad organized by Department of Computer Science & Engineering on 26<sup>th</sup> July 2017.
- ✓ V. Tejasvi Student of DMSCS participated in Coding and Debugging event at TECHNOID held at Loyola Academy, Secunderabad organized by Department of Computer Science & Engineering on 26<sup>th</sup> July 2017.
- ✓ Students of DMSCS Ms.Alankruta and Mrs. Anugna Participated in Inter Collegiate Competitions organized by Department of Commerce, Little Flower Degree College, Hyderabad on 11<sup>th</sup> September, 2017.





**B.Sc. MATHEMATICS, STATISTICS & COMPUTER SCIENCE**  
**2017 – 2018**

**I. Departmental Activities:**

**1. Guest Lecture**

Department Organized an Invited talk on “*Applications of Mathematics*” in the INIGO Hall on Thursday 14 December 2017 By **Prof. Jozef Brestensky** (Faculty of Maths, Physics and Informatics (FMPHI) in Comenius University (CU), Bratislava, Slovakia).

Prof. Jozef Brestensky gave a Lecture on Applications of Mathematics To Several Fields and Mainly Focused On Vector Calculus.

**Purpose:** To impart Knowledge on Applications of Mathematics to under graduate Students.

**Report:** Prof. Jozef Brestensky delivered a lecture on Applications of Gradient, Divergence and curl of Vector calculus in several Fields. All MSCS students, Students of ACE, AET, ACDS were participated in this event. Professor has given a brief introduction to some of the applications of vector calculus to physics. He has given a number of important governing equations and results. In particular, He explained the equations describing the behavior of physical quantities such as electric fields and the velocity of a fluid are written in terms of the gradient, divergence and curl operators.

**Reviews:** The gradient operator describes the fundamental relationship between potential and  $\mathbf{F} = -\nabla\phi$ . Similarly, the equations of fluid mechanics, or the heat equation, and many other laws of physics are described in terms of these differential operators and their brethren (such as the Laplacian  $\nabla^2$ ). All the students were responded well, understood the concepts of Vector Calculus and its applications.





## STAFF ACHIEVEMENTS

1. Dr. K. Vijayalakshmi Delivered a guest lecture on “**Gauss Lemma**” for M.Sc Mathematics students at Andhra Mahila Sabha Degree College, Hyderabad on 29<sup>th</sup> March 2018.
2. Dr. K. Vijayalakshmi was external examiner for UG and PG courses at St. Francis College for women, Begumpet, Hyderabad.(20-3-2018, 22-3-2018, 23-3-2018 and 28-03-2018).

3. Dr. K. Vijayalakshmi Delivered a guest lecture on “**Over view of Functional Analysis**” for M.Sc Mathematics Students at Andhra Mahila Sabha Degree College, Hyderabad on 15<sup>th</sup> March, 2018.
4. Dr. Shakira Sultana Delivered a guest lecture on “**Advancement in Fluid Mechanics**” for M.Sc Mathematics students & staff at AnwarulUloom College, Hyderabad on 24<sup>th</sup> March 2018.
5. Dr. K. Vijayalakshmi is Organizing committee member and Published a paper on “**New approach to Matrix cryptography**” in Integrated International Immersion Conference(IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup> Feb -1<sup>st</sup> March 2018.
6. Dr. Shakira Sultana Published a paper “**Natural convection in a sparsely packed porous medium**” in Integrated International Immersion Conference(IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup>Feb -1<sup>st</sup> March 2018.
7. Mrs.K. Ketana Participated in Integrated International Immersion Conference(IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup>Feb -1<sup>st</sup> March 2018.
8. Delivered a lecture on “ **Riemann Zeta function**” as a resource person for “Ramanujam memorial Seminar which was held on 19<sup>th</sup>-20<sup>th</sup>February 2018 at Annamalai University, Chidambaram.
9. Dr. K. Vijayalakshmi Attended a Tele-conference on “**Curve Tracing**” for UG students at Dr.B.R.Ambedkar Open University, Hyderabad which was telecasted in Yadagiri (Saptagiri) Doordarshan channel on February 11<sup>th</sup> 2018 from 2.00 pm – 3.pm.
10. Dr. K. Vijayalakshmi was invited as Chief Guest for Mathematics Carnival organized by Sri Chaitanya School, HMT Colony, Alwal, Secunderabad.8- 12-2017.
11. Dr. K. Vijayalakshmi published a research paper entitled “Critical success factors for developing Network marketing distributors in India” co-authored with Dr.Bhavannarayana K and Dr.V.Mohan Kumar in Journal of ‘Advances in Global Business Research’ ISBN-13:978-93-87432-48-2 Published by Mc Graw Hill Education in Contemporary Issues in Global Business Research Across Emerging Countries.
12. Dr. K. Vijayalakshmi Presented a paper titled“ Network Marketing Format of Entrepreneurship Development- An Empirical Analysis’ held at MOI University On November 23—25, 2017,Eldoret- Kenya.

13. Dr. K. Vijayalakshmi attended a one day workshop “ Empowered Educators- University Relations Empowered Educators program” organized by Delloitte University.
14. Dr. K. Vijayalakshmi attended a one day Faculty Development Program on 21<sup>st</sup> October 2017 Organized by Department of M.C.A, Loyola Academy Degree & P.G. College, Alwal Secunderabad.
15. Mrs. M. Sailaja attended a one day Faculty Development Program on 21<sup>st</sup> October 2017 Organized by Department of M.C.A, Loyola Academy Degree & P.G. College, Alwal Secunderabad.
16. Dr. K. Vijayalakshmi participated in the National Conference on “Recent Advances of Mathematical Techniques in Science and Engineering” 30<sup>th</sup> & 31<sup>st</sup> July, 2017. Organized by Department of Mathematics, Osmania University, Hyderabad.
17. Dr. K. Vijayalakshmi participated in the International Conference on “Global Insurance: Practices & Outlook” 30<sup>th</sup> & 31<sup>st</sup> July, 2017. Organized by Department of Commerce, Osmania University, Hyderabad.
18. Dr. K. Vijayalakshmi is one of the author of the Text book “Mathematics –II” published by Telugu Akademy, Hyderabad which was released on 21-6-2017.
19. Dr. K. Vijayalakshmi Completed Minor research project titled “Combinatorial techniques for Advanced Counting” of UGC worth Rs.2,60,000 in the year 2016 for duration of two years.
20. Dr. K. Vijayalakshmi Delivered a guest lecture on “**Riemann Integral**” in Real Analysis for B. Sc Mathematics students at Little Flower Degree College, Hyderabad on 6<sup>th</sup> August, 2017.
21. Ms. M. Sailaja Participated in the Workshop on “Teaching and Learning” Organised by Seattle University, School of Law, USA & St. Joseph’s College of Law, Bengaluru. Held on 11<sup>th</sup> to 15<sup>th</sup> December 2017.
22. Ms. Kakani Ketana Participated in National Conference on “Recent Advances of Mathematical Techniques in Science and Engineering” 30<sup>th</sup> & 31<sup>st</sup> July, 2017. Organized by Department of Mathematics, Osmania University, Hyderabad.
23. Dr. Shakira Sultana Presented a paper titled “Effect of Magneto convection in a porous medium” in the National Conference on “Recent Advances of Mathematical Techniques in Science and Engineering” 30<sup>th</sup> & 31<sup>st</sup> July, 2017. Organized by Department of Mathematics, Osmania University, Hyderabad.

24. Dr. Shakira Sultana Participated & Presented a paper titled “Natural Convection of Rotating Magneto convection in a Porous medium” in the “62<sup>nd</sup> Congress of Indian Society of Theoretical and Applied Mechanics” (The International meet – ISTAM- 2017) December 15 – 18, 2017.
25. Dr. Shakira Sultana is a Participated in the GIAN (Global Initiative of Academic Networks) 23<sup>rd</sup> Nov- 22<sup>nd</sup> Dec, 2017, being conducted in the College of Engineering, Osmania University.

### **STUDENTS ACHIEVEMENTS:**

1. Students of NMSCS K V N S Ravi Shankar and Samar Adhip participated and won first prize in **OMNIUM GATHERUM as a part of** Sci-Connect’2018 organized by the Department of Sciences, St. Mary’s College, Hyderabad on 23<sup>rd</sup> February 2018.
2. 19 Students of MSCs Participated in Integrated International Immersion Conference (IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup> Feb -1<sup>st</sup> March 2018.
3. **3 Students** Published a paper on “New approach to Matrix cryptography” in Integrated International Immersion Conference (IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup> Feb -1<sup>st</sup> March 2018.
4. Students of MSCs actively participated in Integrated International Immersion Conference (IIIC-2018) conducted by Loyola Academy on 23<sup>rd</sup> Feb -1<sup>st</sup> March 2018 and modules and exhibits.
5. 9 Students of NMSCS participated in STATA FEST- 2017 Organised by St. Ann’s College for Women, Hyderabad on 16<sup>th</sup> December, 2017.
6. Total 29 Students of MSCS participated in the RESONANCE-2017. Rev. Sr. Swetha Student of AMSCS -25 got First prize in Flower arrangement and Manasa student of DMSCS-2404 got II prize in Quiz.
7. 4 students participated in inter College Competitions organized by Department of Commerce at Little Flower Degree College, Hyderabad on 11<sup>th</sup> September 2017.
8. 16 Students of MSCS participated in National conference on “ Applications of Mathematics- Data Science” organized by Department of Mathematics, St. Ann’s College for Women, Hyderabad on 26<sup>th</sup> August 2017.
9. GSS Manasa student of DMSCS has participated in Spell BEE conducted by Department of Commerce general, Loyola Academy, Alwal Secunderabad.
10. Ms. Tejaswi student of DMSCS has participated in Coding and debugging event at TECHNOID held at Loyola Academy, Alwal Secunderabad organized by Department of Computer Science & Engineering on 26<sup>th</sup> July 2017.

11. Ms.GSSManasa student of DMSCS has won I prize in Turn Coat at TECHNOID held at Loyola Academy, Alwal Secunderabad organized by Department of Computer Science & Engineering, on 26<sup>th</sup> July 2017.









