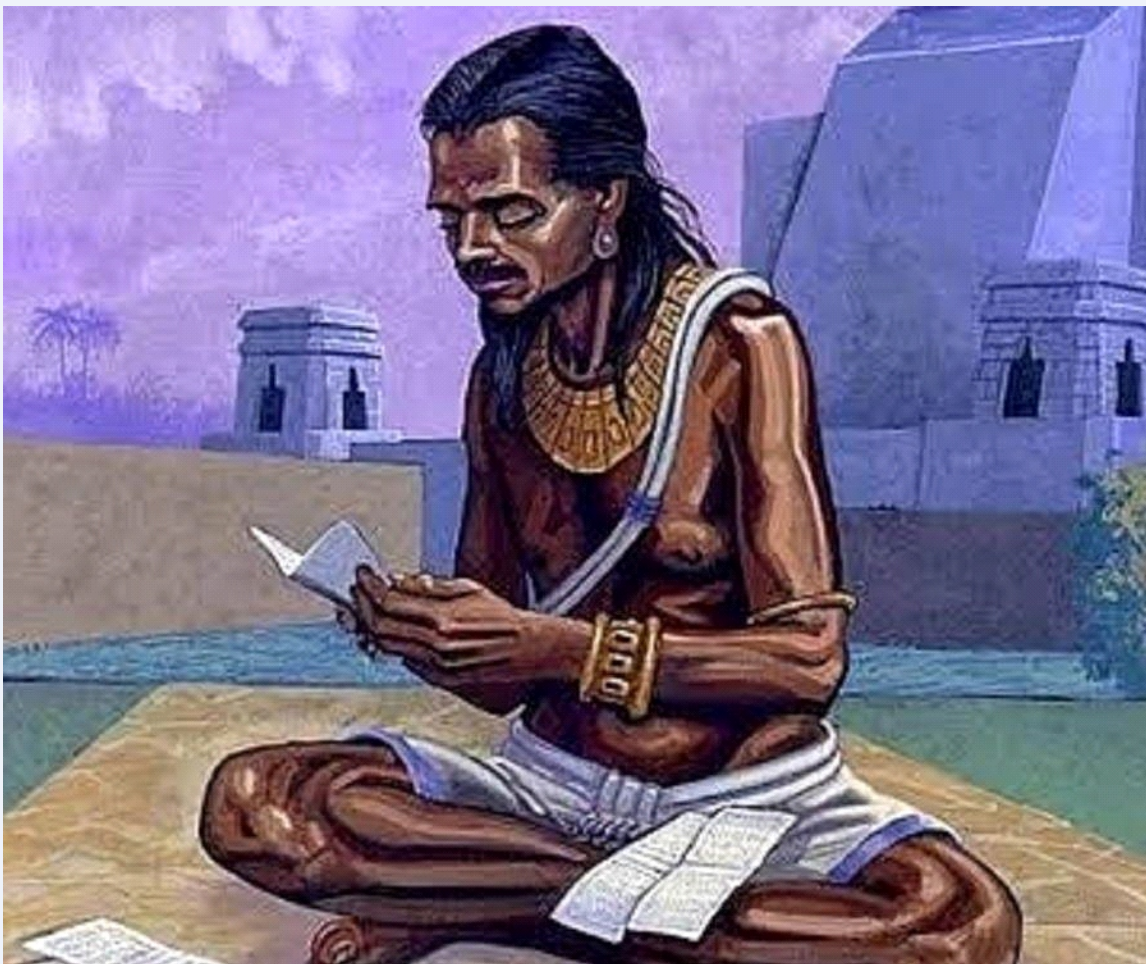




## DEPARTMENT OF MATHEMATICS JNTUH COLLEGE OF ENGINEERING HYDERABAD (AUTONOMOUS)

NEWSLETTER FROM 1<sup>ST</sup> JULY, 2018 TO 30<sup>TH</sup> JUNE, 2019



### BRAHMAGUPTA

**Brahmagupta**, a renowned Indian mathematician and astronomer, lived in the 7th century AD and is celebrated for his remarkable contributions to Mathematics. His works include significant developments in algebra, geometry, and arithmetic. Brahmagupta's most notable achievement was the development of the rules for solving quadratic equations, which made solving such equations much simpler and more efficient.

Aside from his works in Mathematics, Brahmagupta also contributed to astronomy. He wrote a book called *Brahmasphuta siddhanta*, which covered topics such as planetary motions, eclipses, and timekeeping.

## About the Department

The Department of Mathematics was established in the year 1965 at the time of inception of the Nagarjuna Sagar Engineering College to support the Engineering Departments having courses in Mathematics. The Department of Mathematics has become an integral part of JNTU College of Engineering, Hyderabad a constituent college of JNT University, consequent upon the formation of the University in 1972. Ever since the inception, the Department of Mathematics is actively participating in the academic development of the University by properly revising the syllabi of Mathematics Courses to cater the needs of Engineering Departments and the academic industry.

The Department of Mathematics started a 3 Year Post Graduate Course in Mathematics, namely M.Sc (Tech) titled “Systems Theory & Industrial Applications” in 1991. The course was later restructured as two-year M.Sc course in Mathematics with the title “Systems Theory & Computer Modeling” in consonance with the present day developments in global scenario with a suitable curriculum that bridge the gap between academics and industry.

Keeping in view of the requirements of the students community the Syllabus and structure of the course is revised in 2012 and the M.Sc program is renamed as **APPLIED MATHEMATICS**. The M.Sc(Applied mathematics) course is unique in the structure by the presence of the blend of pure mathematics, applied mathematics and computer science subjects in the curriculum. The students from abroad are encouraged to do certain pre requisite courses (if necessary) to understand the concepts from the day one in the class room. Also all the students are encouraged to take up project work related to the real world problems at the final semester which is compulsory in the curriculum. The course is received extremely well in the fields of teaching, research and industry

### ◆ The Vision

- To enrich the problem solving and analytical skills of the stake holders
- To promote research innovation and excellence.
- To solve Ecological, Environmental, Atmospheric and Real World problems.
- To support the Industry and Government in solving the social challenges.

### ◆ The Mission:

The Department of Mathematics encourages and promotes the analytical skills of the stake holders with the use of Advanced Mathematical, Computational and Informatics Techniques to solve the various Industrial and Environmental problems for the benefit of society and to make more competition in the global environment.

### ◆ Programs/Courses Offered

- B.E/ B. Tech
- Ph.D. in Mathematics (Regular & Part–Time)

### ◆ The areas in which the faculty members are actively engaged in research:

- Fluid Dynamics
- Mathematical modeling
- Topology
- Dynamical systems

### ◆ Facilities in the department:

**Computer lab:** The computer lab is equipped with well configured systems with all the latest software for doing computations and simulations at research level in addition to the regular courses for M. Sc students.

**Library:** The department has a well equipped library, consisting of books from all branches of mathematics. Department library with approximately 300 volumes for regular usage is made available to students

#### ◆ **Interactive sessions, competitive exams, career Guidance:**

Quit often the department conduct interactive meetings with the people from software industry and research organizations to enlighten the students, particularly for the students of P.G course.

#### ◆ **Credentials of the Department of Mathematics:**

- In the year 2008, professor of the Department Dr. B. Krishna Gandhi became the first Vice Chancellor of JNTU Anantapur.
- Professor Dr. G. Lakshminarayana was Vice chancellor of JNTU (combined) for Two terms. He was the first vice chancellor from the Department of Mathematics.

#### ◆ **Scholarships & Awards:**

Dr. Shahnaz Bathul (Retd Professor of mathematics JNTUCEH) has instituted an award of Rs 15,000 for the B.Tech student of JNTUCEH who gets a maximum total of marks in 3 Mathematics papers put together.

A gold medal is constituted by Dr. Shahnaz Bathul, for the student who secures highest percentage of marks in P.G Course.

This medals will be presented to the student at the university convocation

#### ◆ **Strengths, Weaknesses, Opportunities, Challenges and Future plans of the department:**

##### **Strengths:**

- The faculty of the Department are actively engaged in research, well experienced and have knowledge in diverse fields of the Mathematics.
- Well qualified faculty
- Actively participation of each faculty in various college committees.
- Mathematics Laboratory with internet facility
- Mathematics Department with internet facility

##### **Weaknesses:**

- The Department does not have all positions filled with permanent staff.
- More effort is needed to increase the number of state/central government funded projects to strengthen the department.
- Soft skills and communication skills of students need to be improved.
- Student and staff are to be encouraged for paper presentation at various National / International conferences, workshops and seminars.


##### **Opportunities:**

- Wide higher education option.
- This department is known for its student friendly atmosphere. We attend to all the problems of the students at a very intimate personal level
- Mathematical softwares (useful in teaching, learning and research)

##### **Challenges:**

- The challenge is to train the students to learn the Mathematical concepts which can be applied to the real world problems.
- To increase students strength in the Department of Mathematics
- To remove phobia about subject and to create interest among the student learn fundamental concepts of Mathematics with joy.
- Manage, improve and upgrade physical facilities.
- To develop the analytical and logical thinking of the students and their skills so that they can apply Mathematical Methods to their real-life situations.
- To develop the analytical and logical thinking of the students and their skills so that they can apply Mathematical Methods to their real-life situations.

♦ The persons headed and molded the department:

❖ Prof. G. Purushotham	❖ Prof. M.M.V.SubbaRao	❖ Prof. D.Narasimha Murthy
❖ Prof. V.RamaMohanRao	❖ Prof.V.S.Rao	❖ Prof.G.RamaKrishnaRao
❖ Prof M.G.Ramaiah	❖ Prof. V. SreehariRao	❖ Prof. B.KrishnaGandhi
❖ Prof.A.RamaKrishnaPrasad	❖ Prof. ShahnazBathul	
<b>Head of the Department</b>		
	Prof. M. A. Srinivas	From: 06-05-2011
		To: till date

**Faculty Profiles**

Name of the Faculty	Designation	Qualifications
<b>Regular Faculty</b>		
Dr. M. A. Srinivas	Professor	M.Sc, Ph.D, M.Tech
Dr. B. Ravindra Reddy	Associate Professor	M.Sc., M.Phil., Ph.D
Dr. V. Srinivasa Kumar	Assistant Professor	M.Sc., M.Phil., Ph.D
<b>Adhoc Faculty</b>		
Dr. B. Shankar Goud	Lecturer	M. Sc, M. Tech, B.Ed, Ph. D
P. Megaraju	Lecturer	M. Sc
Dhanalakshmi Naidu	Lecturer	M. Sc
V. Madhu Kumar	Lecturer	M. Sc
<b>Non Teaching Staff</b>		
B. Swapna	Programmer	B. Tech
R. Neelima	Attender	10 <sup>th</sup> Class



**Dr. M.A. Srinivas**

M.Sc (A.U), M.Tech ,Ph.D (A.U),  
**Professor & Head of the Department**

Prof M. A. Srinivas is currently heading the Department of Mathematics. He is Chairperson, Board of Studies (BOS) of Mathematics, JNTUH College of Engineering, Hyderabad. He is member of BOS of Mathematics for JNTU Hyderabad and many autonomous colleges of engineering and technology of the states Telangana and Andhra Pradesh.

Research interests include Differential Equations, Mathematical Modeling. He guided 6 students for Ph.D and 3 for M.Phil. Presently he is guiding 4 students. He Published 31 research papers in peer reviewed journals of national and international standard. He has 27 years of teaching and research experience. He has done Post Doctoral Research, at ICTP, Italy.

He was member of academic senate of Andhra University during 1988-90. He acted as panel member for several universities in the process of selection/ recruitment of teaching positions. He is member of Board of studies of several Autonomous Colleges. He is life time member of various professional organizations viz; Indian Mathematical Society and I S T E. He is a Panel member for A.P Maths Forum, formed by Rajiv Vidya mission, Govt. of A.P. He was member of book selection committee of District Grandhalaya Samstha. He was a resource person to the training program conducted by N I T T R ,Hyderabad .

His present current activities are:

- Contributing for the advancement of basic knowledge among students in pure and applied mathematics
- Applying mathematical concepts to biological / ecological sciences.
- He had completed a research project funded by U G C.



**Dr. V. Srinivasa Kumar**

M.Sc (OU), M.Phil(ANU), Ph.D (ANU)

**Assistant Professor**

His research interests include Real Analysis, Topology, Functional Analysis, Fixed Point Theory And Algebra. He has 18 years of teaching and research experience. He has Published 36 papers in various national and international reputed journals. He Qualified **CSIR-UGC NET** examination for Lectureship. He guided 1 student for Ph.D. He is presently guiding 2 Ph.D students. He did a few courses at various universities like Central University of Hyderabad and TIFR Bangalore etc. He is a Life-Time member of Andhra Pradesh Society for Mathematical Sciences and Calcutta Mathematical Society.

## Courses offered in the Department

List of courses in the A. Y. 2018-19

Sl. No	Course Name	Offering Year & semester
1	Mathematics – I	B. Tech I year I sem (for all branches except Chemical Engineering)
2	Engineering Mathematics	B. Tech I year I sem (for Chemical Engineering)
3	Mathematics- II	B. Tech I year II sem (for all branches except Chemical Engineering)
4	Applied Mathematics	B. Tech I year II sem (for Chemical Engineering)
5	Probability and Statistics	B. Tech II Year I Sem (for CIVIL Engineering)
6	Engineering Mathematics – III	B. Tech II year I sem (For Mechanical, Metallurgical and Chemical Engineering Branches)
7	Mathematics - III	B. Tech II year I sem (for EEE)
8	Computer Oriented Statistical methods	B. Tech II year II sem (for CSE)
9	Mathematics - III	B. Tech II year II sem (for ECE)

### Paper Publications A. Y. 2018-2019

Sl. No	Name of the Faculty	No. of Journals in A. Y. 2018-19
1	Prof. M. A. Srinivas	1
2	Prof. B. Ravindra Reddy	4
3	Dr. V. Srinivasa Kumar	4
4	Dr. B. Shankar Goud	11
	<b>Total:</b>	<b>20</b>

## Prof. M. A. Srinivas

1. CVP Kumar, KS Reddy, MAS Srinivas, Dynamics of prey predator with Holling interactions and stochastic influences, Alexandria Engineering Journal 57 (2), 1079-1086, 8, 2018

## Dr. B. Ravindra Reddy

- 1 K. Madhusudhan Reddy, K. Lakshmi Narayan and **B. Ravindra Reddy**, A delayed SIS Epidemic Model with Non-Linear Incidence Rate, International Journal of Pure and Applied Mathematics (IJPAM), volume 118, No. 2, 2018, 419-427.
- 2 Karuna BNR, K. Lakshmi Narayan and **B. Ravindra Reddy**, Stability Analysis of an HBV Model with Delay in Viral Production, International Journal of Ecology & Development, ISSN 0973-7308, Volume 33, Issue 4, 2018.
- 3 V. Vidyasagar, Madhu Latha K, **B. Ravindra Reddy**, Solving Singularity Perturbed Differential – Difference Equations using Numerical Integration Method, International Journal of Applied Engineering Research, ISSN 0993-4562, Volume 13, Number 22 (2018), pp 15956-15960.
- 4 K. Madhusudhan Reddy, K. Lakshmi Narayan and B. Ravindra Reddy, Hopf Bifurcation Analysis and Stochastic Influence of Delayed SIR Model, International Journal of Ecological Economics and Statistics, ISSN 0973 – 7537, 2018, Volume:39, Issue Number:4.

## Dr. V. Srinivasa Kumar

1. K.Sujatha and **V. Srinivasa Kumar**, On Some Fixed Point Theorems Through weak\*\* Commutative in 2-Metric Space, International journal of Applied Engineering Research, Vol.13, 16, 12507-12512, 2018
2. R. Pandurangarao, **V. Srinivasa kumar**, and B.Nageswararao, Homomorphisms of L-vague semirings of L- Semiring, International journal of Applied Engineering Research, Vol. 13, 12, 2018
3. R. Pandurangarao, **V. Srinivasa Kumar**, On the outer measure of soft sets, International journal of research and analytic reviews, Vol.5, 2, 1120- 1124, 2018
4. **V. Srinivasakumar**, K.Kumaraswamy and K. Sujatha, Fixed Point Theorems Through Contractive type Mappings, International Journal of Mathematical Archive, Vol.9, 8, 19-26, 2018

## Dr. B. Shankar Goud

1. G.Narsimlu., **B. Shankar Goud**. “Numerical study of heat and mass transfer on MHD flow past a parabolic started vertical plate with variable temperature, mass Diffusion and chemical reaction in the presence of viscous dissipation”, *Jour of Adv Research in Dynamical & Control Systems*, Vol. 10, 06-Special Issue, 2018, pp.727-732.
2. **B. Shankar Goud** “Numerical solution on unsteady MHD free convective heat and mass transfer flow along a vertical porous plate in the presence of heat source and suction”, Journal of Applied Science and Computations, Vol.V, Issue XII, December/2018, pp. 2527-2535. DOI:16.10089. JASC.2018. V5I12. 453459. 0500430.
3. G. Bal Reddy., **B. Shankar Goud**., and MN. Raja Shekar., “Implicit finite difference solution of radiation effects on MHD fluid flow of a nanofluid past an exponential stretching sheet embedded in a porous medium”, *Jour of Adv Research in Dynamical & Control Systems*, Vol. 10, 06-Special Issue, 2018. pp.746-760.

4. G. Bal Reddy., **B. Shankar Goud.**, and MN. Raja Shekar., “Free convection boundary layer flow past a inclined flat plate embedded in a porous medium filled with a nanofluid”, *International Journal of Research*, Volume 7, Issue VIII, August/2018, page No: 1188-1195.DOI:16.10089. IJR.2018. V7I4.285311.03128
5. G. Bal Reddy., **B. Shankar Goud.**, and MN. Raja Shekar., “Keller box solution of magnetohydrodynamic boundary layer flow of nanofluid over an exponentially stretching permeable sheet” *Journal of Mechanical Engineering and Technology*,9(10), October 2018, pp. 1646-1656.
6. **B. Shankar Goud** “Numerical solution of an unsteady flow past on moving vertical plate with variable temperature and heat source in the presence of inclined magnetic field and viscous dissipation through porous media”. *International Journal of Research*, Vol.7, Issue X, 2018, pp: 1345-1351. doi:16.10089.ijr.2018.v7i10.285311.003441.
7. **B. Shankar Goud**, Pudhari Srilatha, MN Raja Shekar “Study of Hall current and radiation effects on MHD free convective flow past an inclined parabolic accelerated Plate with variable temperature in a Porous medium”, *International Journal of Mechanical Engineering and Technology*,9(7), July 2018, pp. 1268–1276.
8. D. Mahendar., **B. Shankar Goud** and P.Srikanth Rao “Thermo- diffusion and diffusion-thermo effects on unsteady MHD flow past an accelerated vertical Plate with viscous dissipation-finite element study”, *International Journal of Pure and applied mathematics*, 120 ( 6), pp.8165-8185,2018.(Scopus indexed journal)

#### Conferences in A. Y. 2018-2019

Sl. No	Name of the Faculty	No. of Conferences in A. Y. 2018-19
1	Prof. M. A. Srinivas	--
2	Dr. B. Ravindra Reddy	1
3	Dr. V. Srinivasa Kumar	--
4	Dr. B. Shankar Goud	2
	<b>Total:</b>	<b>3</b>

- 1) Prof. B. Ravindra Reddy: Mathematical Study of an SEIR Epidemic Model in International Conference on Research Advancements in Applied Engineering Sciences, Computer and Communication Technologies at BVRIT, Narsapur, Telangana, 12<sup>th</sup> – 13<sup>th</sup> July 2018.
- 2) B. Shankar Goud, Y.Dharmendhar Reddy :Chemical reaction effect on MHD Heat and Mass transfer fluid flow over a moving vertical plate with heat source and convective boundary condition, International conference on Numerical Heat Transfer & Fluid Flow NHTFF-2018, January 19th -21st, 2018, organized by Department of Mathematics, National Institute of Technology(NIT) , Warangal, Telangana, India.
- 3) B. Shankar Goud, MN. Raja Shekar :Implicit finite difference method for MHD flow of a micropolar fluid past a stretching sheet with heat transfer, Fifth International Conference on Computational Methods for Thermal Problems THERMACOMP2018, July 9-11, 2018, Indian Institute of Science, Bangalore, INDIA

### Books Published by the faculty in A. Y. 2018-19

S. No	Name of the Faculty	Title of the Book	Publisher
1	Prof. M. A. Srinivas	B.Sc – 3 <sup>rd</sup> Year VI Sem - Mathematics – Vector Calculus	Telugu Academy Hyderabad
2	Prof. M. A. Srinivas	B.Sc – 3 <sup>rd</sup> Year V Sem - Mathematics – Integral Calculus	Telugu Academy Hyderabad

### Ph.D s awarded by the faculty in A. Y. 2018-19

Sl. No	A. Y	Year of award	Supervisor Name	Student Name	Title of the Research Topic
1	2018-19	2018	Prof. M. A. Srinivas	Subhadra Nemani	Study of peristaltic Transport of nano fluids
2	2018-19	2018	Prof. M. A. Srinivas	Phulsagar Savata Sham Rao	Bifurcations, limit cycles, oscillations and chaos in some non linear phenomena
3	2018-19	2019	Dr. B. Ravindra Reddy	Karuna B N R	Mathematical Study of Three Compartmental Epidemic Models
4	2018-19	2019	Dr. V. Srinivasa Kumar	S. Ragamai	A study of L- Fuzzy, L-VAGUE structures and their ILK on $\tau$ - Near Rings.
			<b>TOTAL</b>		<b>4</b>

### Faculty Obtained Ph.D. Degree:

S. No	Name of the Faculty Member	Title of Ph.D. Thesis	Month and Year of Award
1	B. Shankar Goud	Study of Hydro magnetic free convective heat and mass transfer fluid flows	04-08-2018

### Board of Studies Meeting

The BOS of Mathematics met on 19<sup>th</sup> June, 2018 to prepare the syllabus for various papers in B. Tech curriculum to be taught by Mathematics faculty R-18 (as per AICTE model curriculum) Regulations.

## Members of the BoS

S. No	Name	Designation
1	<b>Dr. M.A. Srinivas,</b> Professor & HEAD, Department of Mathematics, JNTUHCEH	Chairperson
2	<b>Dr. Y. N. Reddy,</b> Professor, Department of Mathematics, NIT Warangal	Member
3	<b>Dr. V. Ravindranath ,</b> Professor, Department of Mathematics, JNTU, Kakinada	Member
4	<b>Dr. P.A. Lakshmi Narayana,</b> Associate Professor, Department of Mathematics, IIT Hyderabad	Member
5	<b>Dr. N. Kishan,</b> Professor, Department of Mathematics, OU, Hyderabad	Member
6	<b>Dr. P.V. Sundaranand ,</b> Professor, Department of Mathematics, Rayalaseema University, Karnool	Member
7	<b>Dr. G.S. Rama Brahman</b> Senior Consultant, TCS, HYderabad	Member
8	<b>Dr. MN. Rajashekar,</b> Professor, Department of Mathematics, JNTUHCEJ	Member
9	<b>Dr. B. Ravindra Reddy</b> Assistant Professor, Additional Controller of Examinations, JNTU Hyderabad	Member

The board members have thoroughly discussed in the frame work of AICTE model curriculum and recommended to have three Mathematics courses for each branch of engineering. Out of the three, the papers offered in the first two semesters are common to CIVIL, EEE, MECH, ECE, CSE and METT engineering except Chemical Engineering and the third mathematics paper is designed as per the requirement of the specific branch. The syllabus of the papers offered in first two semesters are designed by taking the prerequisite as the syllabus of CBSE/ ICSE/ Intermediate boards of several states.

### Resolution – I:

One paper entitled **Mathematics- I (Linear Algebra and Calculus)** is offered in 1<sup>st</sup> year 1<sup>st</sup> semester curriculum as foundation course from A.Y. 2018-19 and is common to CIVIL, EEE, MECH, ECE, CSE and METT engineering branches except Chemical Engineering branch.

### Resolution – II:

One paper entitled **Engineering Mathematics (Linear Algebra and Differential Equations)** is offered in 1<sup>st</sup> year 1<sup>st</sup> semester curriculum of Chemical Engineering branch as foundation course from A.Y. 2018-19.

### Resolution – III:

One paper entitled **Mathematics- II (Advanced Calculus)** is offered in 1 year 2<sup>nd</sup> semester curriculum as foundation course from A.Y. 2018-19 and is common to CIVIL, EEE, MECH, ECE, CSE and METT engineering branches except Chemical Engineering branch.

#### **Resolution – IV:**

One paper entitled **Applied Mathematics (Transforms and Vector Calculus)** is offered in 1<sup>st</sup> year 2<sup>nd</sup> semester curriculum of Chemical Engineering as foundation course from A.Y. 2018-19

#### **Resolution – V:**

One paper entitled **Probability and Statistics** is offered in 2<sup>nd</sup> year 1<sup>st</sup> semester curriculum of Civil Engineering branch as foundation course from A.Y. 2018-19.

#### **Resolution – VI:**

One paper entitled **Engineering Mathematics – III (Probability Distributions & Complex Variables)** is offered in 2<sup>nd</sup> year 1<sup>st</sup> semester curriculum as foundation course from A.Y. 2018-19 and it is common to Mechanical Engineering, Metallurgical Engineering and Chemical Engineering branches.

#### **Resolution – VII:**

One paper entitled **Computer Oriented Statistical Methods** is offered in 2<sup>nd</sup> year 2<sup>nd</sup> semester curriculum of CSE branch as foundation course from A.Y. 2018-19.

#### **Resolution – VIII:**

One paper entitled **Mathematics- III (Numerical Methods and Complex Variables)** is offered in 2<sup>nd</sup> year 2<sup>nd</sup> semester curriculum of EEE and ECE branches as foundation course from A.Y. 2018-19.

#### **Resolution - IX**

The following papers will offered by the Department of Mathematics for the students of CIVIL, EEE, MECH, ECE, CSE, METT and CHEMICAL Engineering as **open electives** from A. Y. 2018-19 .

- a) Numerical Techniques (CIVIL, MECH, CSE and METT)
- b) Mathematical Programming (CIVIL, EEE, ECE, CSE, METT, and CHEMICAL)
- c) Finite Element Methods (MECH)
- d) Probability Distributions (EEE and ECE)
- e) Z- Transforms and Special Functions (CHEMICAL)

#### **Professional Bodies / Memberships of the faculty**

Sl. No	Name of the faculty	Name of the Organization	Membership
1	Prof. M. A. Srinivas	The Indian Mathematical society	Life Member
2	Prof. M. A. Srinivas	Indian Society of Theoretical and Applied Mechanics	Life Member
3	Dr. B. Ravindra Reddy	The Indian Society for Technical Education	Life Member
4	Dr. B. Ravindra Reddy	Andhra Pradesh Society for Mathematical Sciences	Life Member
5	Dr. V. Srinivasa Kumar	Andhra Pradesh Society for Mathematical Sciences	Life Member



## **JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

Kukatpally, Hyderabad - 500 085, Telangana State, India  
website:[www.jntuh.ac.in](http://www.jntuh.ac.in)