

# **Dr.K.S.Basavarajappa**

**Professor and Head**

**Department of Mathematics,  
Bapuji Institute of Engineering and  
Technology, DAVANGERE -577004**

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## **RESEARCH INTEREST:**

Numerical Methods, Differential Equations, Fluid Mechanics (Bio fluid mechanics), Statistical methods, Fortran-4.

**TEACHING EXPERIENCE:** Having 37 years of teaching experience and 25 years in research worked as

- Lecturer from Oct 1982 to March 1996.
- Senior Lecturer from April 1996 to Feb 2004.
- Assistant Professor from March 2004 to Feb 2006.
- Professor and Head of the Dept. of Information Science and Engg. from Jan 2005 to Jan 2007.
- Principal, BIET from 2014 to 2015.
- Presently working as Professor and Head since March 2006 .
- Nominated as Governing Council Member for BIET, BEA, Davangere.
- Nominated as BEA Enquiry Committee Member.
- Chief Warden for BIET Campus Hostel for Boys and Girls.

## **EDUCATION**

- Ph.D (Mathematical Modelling), 2002 from Indian Institute of Technology, Roorkee.
- M.Sc (Mathematics) 1982, Gulbarga University, Gulbarga .
- B.Sc (PCM) 1980, D.R.M Science College, University of Mysore, Davangere.

## **PROFESSIONAL MEMBERSHIP:**

- Life Member of Indian Society for Technical Education (LM6110).
- Member of Institute For Engineering Research And Publication (PM1490677).
- Member of Advisory Committee for ISRASE eXplore Digital Library and Reviewer for IJRASE Journal.
- Reviewer for Institute for Exploring Advances in Engg. (IEAE) International Journals.

## PUBLICATIONS

- Mathematical Modeling of blood flow in the artery with a reference to rupture behavior of Stenosis”,Aryabhatta Journal of Mathematics and Informatics, Vol.09 Issue-01, ISSN: 2394-9309 (E) / 0975-7139 (P) , PP 831-840.
- “Mathematical Modeling on the study of Spherical Tumor In Relation To Variation of Temperature in Dermal Layers”, Aryabhatta Journal of Mathematics and Informatics, Vol.09 Issue-01, ISSN: 2394-9309 (E) / 0975-7139 (P) , pp 841-852.
- “Mathematical approach on Peristaltic transport of Biofluids in reference to time dependent waves”Aryabhatta Journal of Mathematics and Informatics, (Impact Factor-5.856), Vol.09 Issue-01, ISSN: 2394-9309 (E) / 0975-7139 (P). pp
- Blood Flow in the cardiovascular system in the presence of magnetic field(Presented in the national conference on Magnetic fields, March 2000), Int. J. App. Science and Computations, Vol. 9, No. 3, December 2002, P.P118-127.
- Study of Flow characteristics and viscoelastic parameters of tumour cells in cancerous growth.Int. J. App. Science and Computations, Vol. 9, No. 3, December 2002, P.P 160-170.
- Study of Diabetes Mellitus under the quantitative diet with varying body frame (Presented in the national seminar on advances in Mathematical, statistical and computational methods in science and Technology, November 2000), Accepted for Publication In Australian Physical and Engineering Sciences in Medicine (Revised and sent for publication).
- Experimental and Flow Visualization of Peristaltic Transport of two layered viscous incompressible fluidsRevised and Communicated to Biorheology.
- Pulsatile flow in Carotid artery Bifurcation with varying Frequencies. Revised and Communicate Biorheology.
- Noise effect on Cardiovascular system (Presented in the Sixth Technical session of Acoustical society, Oct.2000), Communicated to International Journal of Applied Science and Computations.
- “Study of diabetes mellitus under the administration of quantitative diet using Joslin’s principle forvarious body frames-a mathematical model”, abstract is accepted and published in Journal of Bio-mechanics, 2006, Vol-39 (Supl-1), P S616
- “Assessment of Bio-heat distribution in the spherical tissue layers- a Mathematical model toquantify the necrotic core temperature of the tumor using series solution technique” # 7798, 5th World Congress of Biomechanics 2006, P-45.
- “Analysis of Traffic noise parameters in relation with physiological effects”, Journal of Natural and Physical Sciences 16, 2002.

- "A study on mathematical modeling on human blood in reference to the variations of hematocrit" ,journal of analysis and computation, Vol. 4, No. 1, [2008], pp 1-12.
- "A study on physiological effects of noise using mathematical modeling" Journal of intelligent research, [2008].
- “Peristaltic Transport of Bio Fluid in the presence of varying Temperature with reference to Dermal Layer – A Mathematical Model”.
- “A study on Mathematical Modeling on Human Blood in Reference to the Variation of Hematocrit”, Journal of Analysis and Computations, Vol. 4, No. 1 (2008), pp 21-32.
- “Mathematical Study of Glucose-Insulin Model with a reference to Diabetes Mellitus” Aryabhata Journal of Mathematics and Informatics, Vol.9, Issue 1, (2017), pp 863-869.
- “Study Of Stenosis Using Mathematical Modelling To Quantify Physiological Parameters - For Nonrupture Case”, published in the proceedings of National Conference on Emerging Trends in Engineering, Research and Management (NCETERM - 2017).
- “Mathematical approach on Peristaltic transport of Biofluids in reference to time dependent waves”, Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-01, (January - June, 2017) ISSN: 2394-9309 (E) / 0975-7139 (P) pp 921-930.
- “Mathematical modeling on segregation of Biological species in relation to temperature variation” Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-01, (January - June, 2017) ISSN: 2394-9309 (E) / 0975-7139 (P), pp 870-877.
- “Mathematical Modeling of blood flow in the artery with a reference to rupture behavior of Stenosis”, Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-01, (January - June, 2017) ISSN: 2394-9309 (E) / 0975-7139 (P), 831-840.
- “Mathematical Modeling on the study of Spherical tumor in relation to variation of temperature in Dermal layers”, Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-01, (January - June, 2017) ISSN: 2394-9309 (E) / 0975-7139 (P), 841-852.
- “A Study on Mathematical Modeling of Human Blood in Reference to the Variation of Hematocrit”, Journal of Analysis and Computation, Vol-4, No-1, 2008, P No. 21-23.
- “Assessment of Bio-heat Distribution in the Spherical Tissue layers- a Mathematical model to quantify the necrotic core temperature of the tumor using series solution technique” No. 7798, 5<sup>th</sup> World Congress of Bio-Mechanics, P-45, 2007
- “A study on aneurysm rupture in the communicating artery using mathematical model, computation of physiological flow parameters by fehlberg method”, Aryabhata Journal of Mathematics and Informatics, vol-2, July – December -2012, p no. 321-346.
- “Mathematical Modelling on Epidemics with A Reference To Deterministic Approach”, Aryabhata Journal of Mathematics and Informatics, vol-09,

January – June 2017, p no. 853-856.

- “Mathematical study of pulsatile flow in carotid artery bifurcation”, Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-02, (July - December, 2017) ISSN: 2394-9309 (E), 242-250 (P)
- “Mathematical approach of quantification of populations in epidemic model with a reference to Industrial Pollution”, Aryabhata Journal of Mathematics and Informatics, Vol.09 Issue-02, (July- December, 2017) ISSN: 2394-9309 (E), 232-240 (P)

## **SHORT TERM COURSES/WORSHOPS**

### **Attended**

- Conference from 01-12-1997 to 05-12-1997, UGA-DSA, Central College, Bangalore.
- Conference from 22-05-1997 to 24-05-1997, JNNCE, Shimoga.
- Conference from 16-02-2002 to 17-02-2002, UOR Roorkee.
- Workshop from 06-09-1996 to 07-09-1996, Kuvempu University, Shankaraghatta.
- Introductory Workshop on Bio technology organized by VTU, Belgaum and Institution of Engineers, Bangalore from 19-08-2002 to 21-08-2002
- Workshop, on “Mathematical Modeling in Biotechnology” at MSRIT on 12-05-2004 Bangalore.
- AICTE sponsored Two-day seminar on Reforms in the Conduct of Examination Process, held on December 4<sup>th</sup> and 5<sup>th</sup> 2004 at Visvesvaraya Technological University, Belgaum.
- Oneday seminar on “Perspective in Mathematics” on 10-02-2006 at Karnataka University, Dharwad.
- One day workshop on Preparation of Model Question papers of Engineering Mathematics 06 MAT 31 , 06 MAT 41 and 06 BT 41, KLECET , Belgaum on 08-09-2007.
- One day workshop on “Environmental awareness and water requirement” conducted by Karnataka Rajya Vignana Parishath on 12-09-2007, BIET, Davanagere.
- Three days workshop on “Mathematical aspects of Scientific Computing” on 24-04 -08 to 26-04-08 conducted by Satyabama university, Chennai.
- 12<sup>th</sup> ISTE State level Annual Convention and Two Days National seminar on “Role of Faculty in the examination system” on 20<sup>th</sup> and 21<sup>st</sup> Nov 2009 at GM Institute of Technology, Davangere.
- One day workshop on “ Draft syllabus- Basic sciences, VTU Course subjects” on 29.03.2010 at HKES” S.L.N College of Engineering, Yeramarus Campus, Raichur.
- Two day Train-the-Trainer programme on Research Methodology organized by

VTU E-Learning centre Mysore on 7<sup>th</sup> and 8<sup>th</sup> October 2013 at regional centremysore.

- As Chairman for research presentations at VTU, Belgium on 12-01-2017
- As Chairman BOS, Basic sciences ,Mathematics of I,II,III and IV semester (CBCS) syllabus finalization at jain college of engineering, Belgaum on 4-02-2017
- All faculty members participated in organizing “National science day” on 28-02-2017 under science forum
- VTU EDUSAT meeting at VTU, studio DSERT, Bangalore on 04-03-2017
- BOS meeting at SDM , Dharwad on 20-03-2017
- Dr K.S. Basavarajappa (as coordinator ) and all faculty have work for conducting “Technology Barrier Reduction program” under “ Foundation for advancement of educational research” (FAER) for rural government high school , kannada medium students from 24-04-2017 to 12-05-2017
- Attended and delivered an invited talk on “Use of integral transforms in Engineering Applications” on 07-03-2017.
  
- Attended and Delivered VTU EDUSAT lectures of engineering mathematics –IV on 30<sup>th</sup> and 31<sup>st</sup> march , 12<sup>th</sup> and 13<sup>th</sup> April and on 16<sup>th</sup> may 2017 at VTU studio DSERT Bangalore.
  
- Attended and Delivered lecture on Mathematics for future on 11-05-2017 under TBRP programme.
  
- Attended and delivered an invited talk on Mathematics for Bachelor of Computer Applications students at Bapuji Hi-Tech college, Davangere on 06-07-2017
  
- Attended and Delivered VTU EDUSAT lectures of Engineering Mathematics –II on 19<sup>th</sup> and 20<sup>th</sup> February , 19<sup>th</sup> and 20<sup>th</sup> March and on 25<sup>th</sup> May 2018 at VTU studio DSERT Bangalore.
  
- Attended and Delivered Keynote address on Applications of Mathematics at “International Conference on Recent trends in Multi-disciplinary Research”. (ICRTMDR-2018) on 20<sup>th</sup> to 21<sup>st</sup> December 2018, Thoothukudi ,Tamilnadu.
  
- Attended and Delivered Keynote address on Applications of Mathematics at “International Conference on Recent trends in Multi-disciplinary Research”. (ICRTMDR-2018) on 20<sup>th</sup> to 21<sup>st</sup> December, Thoothukudi ,Tamilnadu.
  
- Attended and Delivered Talk on “Modelling on industrial pollution in reference to health hazards” at Civil Engg. Dept., BIET Davangere on 19-01-2019.
- Attended and Delivered Talk on “Mathematical concepts in Engineering” at STJIT, Ranebennur on 25-01-2019.
- Attended and Delivered Talk on “Modeling on Numerical techniques to solve differential equations” in PESIT, Shivamogga on 29-04-2019

## **Expert Lectures Delivered:**

- Delivered Lecture on Applications of Numerical Methods in Engineering on 6<sup>th</sup> March 2010 at Sridevi Institute of Engineering and Technology, Tumkur.
- Delivered Lecture on Differential Equations and its Applications on 31<sup>st</sup> March 2010 at Sahyadri Science College, Shimoga.
- Delivered a lecture on “Applications of Mathematics in Engineering” on 30-31<sup>st</sup> Aug, 2010 at Hirasugar Institute of Technology, Nidasoshi, Belagavi.
- Delivered a Talk on “Applications of Differential Equations in Engineering and Biological Systems” at RNSIT, Bangalore on July 28-30<sup>th</sup>, 2011.
- Delivered a lecture on fundamentals of Mathematics of CBSE scheme for 11<sup>th</sup> and 12<sup>th</sup> class discipline for teaching faculty members at Tholhunse on 9<sup>th</sup> June 2013.
- Delivered a lecture on “Application of Mathematics in the Engineering field” on 22-23<sup>rd</sup> Nov 2013 at National Institute of Engineering, Mysore.
- Delivered an invited talk on “Use of integral transforms in engineering applications” on 07-03-2017.
- Delivered VTU EDUSAT lectures of engineering mathematics –IV on 30<sup>th</sup> and 31<sup>st</sup> march , 12<sup>th</sup> and 13<sup>th</sup> April and on 16<sup>th</sup> may 2017 at VTU studio DSERT Bangalore.
- Delivered lecture on Mathematics for future on 11-05-2017 under TBRP programme.
- Delivered and invited talk on Mathematics for Bachelor of Computer Applications students at Bapuji Hi-Tech college, Davangere on 06-07-2017.
- Delivered VTU EDUSAT lectures of Engineering Mathematics –II on 19<sup>th</sup> and 20<sup>th</sup> February , 19<sup>th</sup> and 20<sup>th</sup> March and 25<sup>th</sup> May 2018 at VTU studio DSERT Bangalore.
- Delivered Keynote address on Applications of Mathematics at “International Conference on Recent trends in Multi-disciplinary Research”. (ICRTMDR-2018) on 20<sup>th</sup> to 21<sup>st</sup> December 2018, Thoothukudi, Tamilnadu.
- Delivered Talk on “Modelling on industrial pollution in reference to health hazards” at Civil Engg. Dept., BIET Davangere on 19-01-2019.
- Delivered Talk on “Mathematical concepts in Engineering” at STJIT, Ranebennur on 25-01-2019.
- Delivered Talk on “Modeling on Numerical techniques to solve differential equations” at PESIT, Shivamogga on 29-04-2019.

## **Papers Presented**

- Peristaltic Transport of two layered viscous incompressible fluid, Proceedings of the National Conference on Biomedical Engineering, 196-208, April 2000.

- Study of flow characteristics in the Communicating arteries, Proceedings of the International National Conference on Mathematical Modeling, Tata Mc. Graw Hill Publishing Co. 710-714, Jan 2001.
- Presented a paper in three days faculty development programme Alan M. Turing – SICT entitled “Mathematical Modeling and soft computing of physiological parameters” at PESIT, Bangalore
- Study of Kinematics on Kinematics of Traffic flow, Proceedings of the International National Conference on Mathematical Modeling, Tata McGraw Hill Publishing Co. 723-728, Jan 2001.
- Mathematical Model on Industrial pollution and spread of infections diseases using Growth models for epidemics, Proceedings of National Conference on EPCR-04, 4<sup>th</sup> and 5<sup>th</sup> October-2004, UBDTCE.
- Study of flow characteristics and viscoelastic parameters of tumor cells in cancer growth, proceeding of two day workshop on modeling and simulation in life sciences, material and technology copyright -2004 Narosa Publishing House Pvt. Ltd., p.no. 229-236
- Effects of Flow Characteristics on prostate cancer in Indo-German workshop on Mass Health Care and Infrastructure support: Role of Bio-Mechanics and its Industrial Approach, 11<sup>th</sup> and 12<sup>th</sup> February 2005, India Habitat Center, HUDCO, New Delhi.
- Effect of Fluoride ion Concentration in Water, Surface Soils and Vegetables of three fluoride affected villages in Davangere District in Southern part of India, in International Conference on Water and Health, 21<sup>st</sup> and 22<sup>nd</sup> January, 2005, JSS Research Center, SJCE, Mysore.
- A study on Mathematical Modeling of Human Blood in Reference to the Variation of Hematocrit, Abstracts, in National Conference on "Mathematical methods and Applications" on 17 -18<sup>th</sup> March 2007 in Basaveshwara Engg. College, Bagalkot under TEQIP. p .34
- A Study on Physiological effects of Noise using Mathematical Modeling, Abstracts, in National Conference on "Mathematical methods and Applications" on 17 -18<sup>th</sup> March 2007 in Basaveshwara Engg. College, Bagalkot under TEQIP. p .36
- Presented a paper entitled Peristaltic Transport of Bio Fluids in the presence of varying temperature with a reference to dermal layer –A Mathematical Model in National conference on Biomechanics, 7<sup>th</sup> and 8<sup>th</sup> of march 2009, Indian Institute of Technology, Roorkee.
- Presented a paper entitled Mathematical Model To Study The Bio-Heat Distribution In Reference To Spherical Tumor To Quantify The Necrotic Core Temperature in National conference on Biomechanics, 7<sup>th</sup> and 8<sup>th</sup> of march 2009, Indian institute of technology, Roorkee
- Presented a paper entitled Mathematical Modeling On Diabetes Mellitus Under The Administration Of Quantitative Diet Using Joslin’s Principle For Various Body Frames, in National conference on Biomechanics, 7<sup>th</sup> and 8<sup>th</sup> of march 2009, Indian institute of technology, Roorkee

### **Seminars/Workshops/Events Organized:**

- Organized Extension Lecture Programme for the year 2003-04 at BIET, Davangere
- Organized one day workshop on “Mathematical applications in Engg.systems” on 27-10-2007, BIET, Davanagere.
- One day Workshop on “Mathematics & its Applications in Engineering” held on 18<sup>th</sup> Feb 2010 at Bapuji Institute of Engineering & Technology, Davangere.

- Organized one day programme on “Ramanujan Mathematics awareness programme RMAP-2013”, BIET Davangere
- Organized “Technology Barrier Reduction Program(TBRP)” held at Bapuji Institute of Engineering and Technology, Davangere from 18-4-16 to 6-5-16.
- Organized “Technology Barrier Reduction Program(TBRP) from 24<sup>th</sup> April to 12<sup>th</sup> May 2017” held at Bapuji Institute of Engineering and Technology, Davangere
- Organized one day Seminar on “Science in Engineering (SSE-2017)” on 15-12-2017 at BIET Davangere
- Organized “National Science Day” on 28-02-2018 under Science forum.
- Dr. K.S.Basavarajappa (as coordinator) and all faculty were involved for successful conduction of “Technology Barrier Reduction program (TBRP)” by Foundation for advancement of Education and Research (FAER)”. Participants were from rural Government High School, Kannada medium at BIET, Davangere from 16-04-2018 to 04-05-2018
- Organized KSCST Seminar cum Project exhibition on 10<sup>th</sup>& 11<sup>th</sup> August 2018 at BIET, Davanagere.
- Organizing Secretary for “One day workshop on Recent Trends on the Applications of Science in Engineering(NCRSE-2018)” on 28<sup>th</sup> September, 2018 at BIET, Davanagere.
- Worked as Organizing Secretary for “One day workshop on Recent Trends on the Applications of Science in Engineering”(NCRSE-2018) on 28<sup>th</sup> September, 2018 at BIET, Davanagere.
- Attended meeting of “Technology Barrier Reduction Programme”(TBRP) for Rural Government high school students under Foundation for advanced Educational Research (FAER) sponsored by ZEBRA technologies at Bengaluru on 29<sup>th</sup> November 2018.
- Conducted National Mathematics Day on 27<sup>th</sup> December, 2018.
- Organized “Technology Barrier Reduction Program (TBRP)” held at Bapuji Institute of Engineering and Technology, Davangere from 22<sup>nd</sup> April 2019 to 10<sup>th</sup> May 2019.
- Coordinator for Student Induction program from 2018-19 and 2019-20.
- Organized Student Induction Program Phase I for First Year students from 01-08-2019 to 10-08-2019
- Organized National Mathematics Day in the Department of Mathematics, BIET on 28.12.2019.
- Organized Student Induction Program Phase II for First Year students from 10.-02-2020 to 15-02-2020

### **Roles and Responsibilities:**

Worked as:

- Deputy Chief Coordinator for VTU Central Valuations, Engineering (UG &PG), BIET, Davangere for six years.
- Coordinator for IGNOU, BIET, Davangere from Jan-2003 to January 2007.
- Sports convener for three years.
- Assistant warden for BIET, Boys Hostel for three years from 1983to 1986.
- NSS Officer for three years.
- Treasurer for KRVP for three years.



- Member, BOS, UG Mathematics, Davangere University, Davanagere.
- Member BOS, UG Board of Studies in Mathematics, Kuvempu University.
- Member BOE, UG Board of Studies in Mathematics, Kuvempu University, Shankaraghatta.
- Chairman, BOE, Mathematics composite board, VTU, Belgaum.
- Chairman, BOS, Mathematics composite board, VTU, Belgaum.
- Member, BOE, Mathematics composite board, VTU, Belgaum.
- Member, BOS, Mathematics composite board, VTU, Belgaum.
- Subject Co-ordinator for VTU EDUSAT Programme.
- Co-coordinator for Library office, BIET.
- Dean for VTU Exams, BIET.
- Coordinator, TBRP.
- Working as Convener, Science Forum.
- Centre Chief for NEET examination.
- Subject Expert for VTU EDUSAT Programme.
- Member, Bapuji Enquiry Committee.
- Governing Council Member, BIET.
- Domain Expert for Research Unit, VTU, Belagavi.
- Organized “33 Extension Lectures” in BIET sponsored by IISC, Bangalore.

### **Awards:**

- Received best teacher award by the institution for giving 100% results for 5 times.

### **Core Subjects Taught:**

Engineering Mathematics I , Engineering Mathematics II , Engineering Mathematics III, Engineering Mathematics IV, Advanced Mathematics I , Advanced Mathematics II , Applied Mathematics (M.Tech), Statistics & Probability, Quantitative Techniques (MBA), Computational Techniques & Queuing Theory(MCA), Biostatistics and Bio modelling, Discrete Mathematical Structures for Bio-Technology.

**Ph.D. Thesis:** “Analytical Solutions of some problems in Biomechanics”

**Project Guided:**

- Number of Ph.D Awarded under the Guidance: 07

Sl. No	Name of the Student	USN	Ph.D Thesis title	Year of Award
1	K S Onkarappa	Kuvempu University	“Analytical solutions to quantify the physiological parameters of some problems in reference to Health Hazards – A Mathematical Model”	2009
2	Manjunath G	Kuvempu University	“Study of Mathematical Models for Evaluation of process parameters of some problems in BioMechanics”	2009
3	Sunanda S Naik	4BD09PGM02	“ The Study of Some problems in Biofluid Mechanics using Mathematical Modeling in reference to Health Hazards”	2019
4	Ashwini M Rao	4BD09PGM01	“Developing Mathematical Models in Biological systems with reference to flow behaviour of blood for variable partameters”	2019
5	Sathisha A B	4BD09PGM05	“Mathematical Modeling to study of some problems for physiological flow parameters ib Biological and Industrial System”	2019
6	Mallikarjun K M	4BD09PGM03	“Mathematical Modeling approach to study the behavior of physiological flow parameters of some problems with reference to Health Hazards”	2019
7	Krishna kumar T K	4AI09PGM01	“Study of some problems for Biophysical parameters using Mathematical Modeling”	2020

**Residential Address**

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