V.S.B ENGINEERING COLLEGE

(AN AUTONOMUS INSTITION)

APPROVED BYAICTE,NEWDELHI,AFFILIATED TOANNA UNIVERSITY, CHENNAI AN ISO 9001:2015 CERTIFIED INSTITUTION ACCREDITED BY NAAC, NBA ACCREDITED COURSES

DEPARTMENT OF BIOMEDICAL ENGINEERING

2025-2026

ODD SEMESTER

ABOUT THE COLLEGE :

V.S.B Educational Trust was founded in the year 2000 by Mr. V.S. Balsamy, the founder and Chairman of the V.S.B Engineering College, with an interest in promoting, managing and administrating educational institutions with high academic standards, discipline and to take up and help other allied activities in the field of education. Under the Trust, V.S.B Engineering College, Karur was established in the year 2002 and V.S.B College of Engineering Technical Campus, Coimbatore in the year 2012.

Vision of the Institution :

We endeavour to impart futuristic technical education of the highest quality to the student community and to inculcate discipline in them to face the world with self-confidence and thus we prepare them for life as responsible citizens to uphold human values and to be of service at large. We strive to bring of the Institution as an Institution of academic excellence of International standard.

Mission of the Institution :

We transform persons into personalities by the state-of the art infrastructure, time consciousness, quick response and the best academic practices through assessment and advice.

ABOUT THE DEPARTMENT :

Biomedical engineering is an interdisciplinary program that combines engineering with biology to solve medical problems in living systems. The program aims to equip students with skills to develop new technologies for life saving equipment, biomedical instruments for treatment and diagnosis, physiological parameter monitoring using sensors, biomechanics, biomedical imaging, medical devices, cell and tissue engineering and more other medical applications. The course also aims at enabling the students to acquire technical skills for becoming experts in telemedicine, healthcare communication and medical informatics. The strong collaborative connection with academia, elinical medicine and industry offers opportunities for. professional development and to gain unique knowledge and experience in the field.

VISION OF THE DEPARTMENT :

To create a centre of academic excellence in the field of Biomedical engineering through innovative research contributions, industrial oriented teaching and training for betterment in healthcare.

MISSION OF THE DEPARTMENT :

- To motivate faculty members and students to explode their creativity to develop innovative products by utilizing modern technologies to serve the society. To inculcate the industrial
- need of the biomedical engineers among the students through relevant training and value-added courses. To produce technically intense engineers by practicing innovative teaching
- methodologies.

FOUNDER & CHAIRMAN

V.S. Balsamy, B.Sc., L.L.B.,

Chairman's Message

Mr.V.S.Balsamy, B.Sc., L.L.B., a leading luminary, has 31 years of bright standing in the field of law. He is the recipient of "Indira Gandhi Sadhbavana Award" from Global Economic Council, New Delhi. He was also honoured with "The Best Humanitarian Award" in 2005. VSB Educational Trust was founded by him as the Founder-Trustee in the year 2000. He started V.S.B. Engineering College in Karur in the year 2002 and V.S.B. College of Engineering-Technical Campus in Coimbatore in the year of 2012. He, the Correspondent of VSB Group of Institutions, lays emphasis on 'Hard Work'. As he strongly believes that "HARD WORK IS THE KEY TO SUCCESS", it is conceived as the motto of the Institutions.

WORDS FROM THE CHAIRMAN'S DESK :

Our Institution, a temple of learning and a hallmark of discipline, treads towards the zenith of glory by preferring the education of global standards in the best quality and variety, and substantiates to be a benchmark among all the colleges in India. The College management, the members of the faculty and all other employees travail together with the resolution of grading our College at the topmost rung of the ladder of education. Within a short span of time, we have provided the students with all the requirements as necessitated by the University Norms. We give an impetus for ever to our V.S.B. Engineering College. I cordially greet all the students, who strive for academic and moral excellence, to be a part of the V.S.B.Educational family and to graduate successfully as world-class professionals. I do always solicit the entrepreneurs / recruiters to conduct campus recruitment drive in our institution and I assure that our students will ascertain their expertise in the organizations in which they are recruited for mutual development.

WITH REGARDS,

V.S. Balsamy, B.Sc., L.L.B.,
Founder & Chairman
VSB Group of Institutions.

HOD's Message

Mrs.A.P. Swarnalatha. M.E.,

"You may never know what results come of your actions, but if you do nothing, there will be no results".

-Mahatma Gandhi.

Welcome to BiomedicalEngineering! It's a pleasure to celebrate the achievementsandgrowth of our Biomedical Engineering Department.Ourfaculty's innovative research continues to address keyhoefalthcare challenges, pushing the boundaries knowledgeandsolutions. We deeply appreciate the dedicationofourstudents. Your passion for learning, research, andactiveparticipation reflects a strong commitment to becomingfuture leaders in the field. Your ideas and energy keepourdepartment vibrant and forward-moving. Together,through collaboration and innovation, we are creatingimpactful healthcare solutions. Let's continue exploring, contributing, and striving toward a brighter future in biomedicalengineering. Thank you all for your hard work and commitment. Here's to reaching new heights together!

Assistant HOD's Message

Mrs.S.Keerthana M.E.,

"Excellence is a continuous process and not an accident"

-APJ Abdul Kalam.

Welcome to theDepartment of Biomedical Engineering at V.S.B Engineering College, Karur is committed to addressing real-world healthcare challenges through quality education and impactful research. We emphasize outcome-based learning to equip students for success in industry, research, and society, supported by dedicated faculty who continually update their expertise to foster academic excellence. Research is a key strength, with work in biomedical measurements, biomaterials, tissue engineering, signal and image processing, and medical device design, often resulting in publications with student collaboration. We value our strong faculty–student bond and the achievements of our alumni in biomedical industries, IT sectors, and academia, whose continued support helps enhance educational quality as we strive to advance biomedical engineering and healthcare impact.

DEPARTMENT FACULTY:

Mrs.K.Kavitha, M.E, Ph.D.,
Professor

Dr.Yuvaraj .V, M.Tech, Ph.D.,
Assosiate Professor

Mrs .C.Nithya, M.E.,
Assistant Professor

Ms. S.Lakshmi Priya, M.E.,
Assistant Professor

Ms. S.Preethi , M.E.,
Assistant Professor

PROGRAM SPECIFIC OUTCOMES [PSO]:

1.To design and develop diagnostic and therapeutic devices that reduces physician burn out and enhances the quality of life for the end user by applying fundamentals of Biomedical Engineering. 2.To apply software skills in developing algorithms for solving healthcare related problems in various fields of Medical. 3.To adapt to emerging information and communication technologies (ICT) to innovate ideas and solutions for current societal and scientific issues thereby developing indigenous medical instruments that are on par with the existing technology.

PROGRAM OUTCOMES [PO]:

1. **Engineering knowledge:**
   Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate. review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create select, and apply appropriat techniques, resources, an modern engineering and IT tool including prediction an modeling to complex engineerin activities with an understandin of the limitations

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

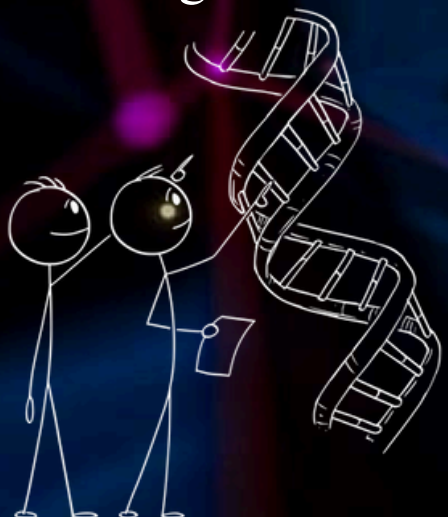
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change



PROGRAM EDUCATIONAL OBJECTIVES (PEOS):

- To enable the graduates to demonstrate their skills in solving challenges in their chosen field through the core foundation and knowledge acquired in engineering and biology.
- To enable the graduates to exhibit leadership, make decisions with societal and ethical responsibilities, function and communicate effectively in multidisciplinary settings.
- To ensure that graduates will recognize the need for sustaining and expanding their technical competence and engage in learning opportunities throughout their careers

LABORATORY FACILITY:

DIAGNOSTIC & THERAPEUTIC EQUIPMENT LAB

BIOMEDICAL INSTRUMENTATION LAB

ANATOMY AND HUMAN PHYSIOLOGY LAB

BIOSCIENCE LAB

EMBEDDED SYSTEM AND IoMT LAB

MOUs SIGNED:

- Atheenapandian. Pvt.Ltd.,
- Episource
- Meddrainn Healthcare
- Pinnacle Medicals
- Prashan Medical Teachnologies

PLACEMENT

ACHIEVERS

ANANTHAKRISHNAN K
(KARUR)

Capgemini | *Cognizant*

ARIVUMATHI K
(SALEM)

Capgemini | *Infosys*

KAVINRAJ T
(KARUR)

Capgemini

KRISHNA KUMAR M
(VIRUDHUNAGAR)

Capgemini *LTIMindtree*

MAHALAKSHMI K
(SALEM)

LTIMindtree

NIVETHA S
(DINDIGUL)

Capgemini

POOJA M
(DINDIGUL)
Capgemini

RANJANI V
(DINDIGUL)
Capgemini

SAKTHIMHENDRAN K
(VIRUDHUNAGAR)
Capgemini

GAYATHRI K

(KARUR)

B-Arm Med Tech Pvt Ltd

GREADHAR M M

(KARUR)

B-Arm Med Tech Pvt Ltd

KAVIYA S

(KARUR)

B-Arm Med Tech Pvt Ltd

Webinar / Workshop :

Webinar / Workshop :

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INSTITUTION'S INNOVATION COUNCIL (Ministry of Education Initiative)

DEPARTMENT OF BIOMEDICAL ENGINEERING

Organizes

WEBINAR ON

MEDTECH BOOT CAMP : EXPLORING BIOMEDICAL BREAKTHROUGHS

RESOURCE PERSON :

Mr. Motty C. Das,

Biomedical Engineer (Expert in Refractive Laser Systems),
Area Service Manager,
MyHealthSkape Medicals Pvt Ltd, Chennai.

ONLINE MODE

DATE : 13-09-2025

Time : 11.00 a.m. Onwards

SHRI. V.S. BALSAMY
CHAIRMAN

SHRI. B. SATHEESH KUMAR
VICE CHAIRMAN

SHRI. B. VIJAY
SECRETARY

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Webinar / Workshop :

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INSTITUTION'S INNOVATION COUNCIL

DEPARTMENT OF BIOMEDICAL ENGINEERING

Organizes

WORKSHOP ON

"FOSTERING INNOVATION CULTURE THROUGH INTELLECTUAL PROPERTY RIGHTS AND EDUCATION."

RESOURCE PERSON :

Mrs. BESSY TITUS
Patent Associate
Gnanlex Associates LLP
Trivandrum

DATE : 23/10/2025
Time : 10.00 a.m. Onwards

HYBRID MODE

SHRI. V.S. BALSAMY
CHAIRMAN

SHRI. B. SATHEESH KUMAR
VICE CHAIRMAN

SHRI. B. VIJAY
SECRETARY

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Faculty ACHIVEMENTS

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IN

BM3651- FUNDAMENTALS OF HEALTHCARE ANALYTICS

Subject Handler: S. Lakshmi Priya

CBM333 - ASSISTIVE TECHNOLOGY

SubjectHandler: C.Nithiya

BOOK
PUBLICATION

Mrs. A.P. Swarnalatha authored a book chapter titled “AI-Powered Advanced Drug Discovery for Enhancing Privacy and Innovation in Healthcare” in an international publication, published by IGI Global: International Academic Publisher in September 2024. The chapter is associated with V.S.B. Engineering College and carries the ISBN 979-8-3693-3212-2, with DOI: 10.4018/979-8-3693-3212-2.ch003.

BOOK
PUBLICATION

Dr. Yuvaraj et al. authored the book titled "Drugs in Obstetrics and Gynaecology," published by Scientific International Publishing House in 2024, with ISBN 978-936132-538-0.

Paper Publication

Mrs. A. P. Swarnalatha published a paper titled “Design and Implementation of a Customizable Suction Mechanism for Infection Control in Healthcare Settings” in the TELEMATIQUE Journal, Volume 19, Issue 2, April 2025.

Mrs. S. Keerthana published a paper titled “Optimized Energy-Aware Routing Techniques for IoT Networks Using Hybrid Algorithms” in the TELEMATIQUE Journal, Volume 19, Issue 4, May 2025.

Dr. Yuvaraj Velsamy published a paper titled “AI-Powered Framework for Phishing Attack Detection and Prevention in Dynamic Cyber Environments” in the TELEMATIQUE Journal, Volume 19, Issue 1, March 2025.

Ms. S. Lakshmi Priya published a paper titled “A Non-Invasive Glucose Monitoring Approach Using Breath Analysis and Sensor Integration” in the TELEMATIQUE Journal, Volume 19, Issue 5, May 2025.

Mrs. C. Nithya published a paper titled “IoT-Enabled Monitoring and Real-Time GPS Tracking System for Alzheimer's Patients” in the TELEMATIQUE Journal, Volume 19, Issue 5, May 2025.

Mrs. M. Rajalakshmi published a paper titled “Predictive Analysis of Heart Conditions Using Digital Phonocardiography Techniques” in the TELEMATIQUE Journal, Volume 19, Issue 6, May 2025.

Mrs. A. P. Swarnalatha published a paper titled “Gamified Emotion Detection and Music-Based Therapy for Autistic Children Using YOLO Framework” in the TELEMATIQUE Journal, Volume 19, Issue 4, April 2025.

Patent Publication

Mrs. A. P. Swarnalatha published a patent titled “Advanced Customizable Suction Mechanism for Enhanced Hospital Hygiene” (Published Patent No: 202541034102 A) on 25.04.2025.

Mrs. A. P. Swarnalatha published a patent titled “Voice-Assisted CPR Device for Real-Time Emergency Response” (Publication No: 202541034413 A) on 25.04.2025.

Mrs. S. Keerthana filed a patent titled “Hybrid Approaches for Efficient Routing and Energy Usage in IoT Devices” (Patent Application No: 202411080815) on 29.04.2025.

Dr. Yuvaraj Velsamy published a patent titled “Intelligent Phishing Detection and Mitigation Framework Using Advanced AI Techniques.” (Publication No: 202441077474 A) on 25.03.2025.

Ms. S. Lakshmi Priya published a patent titled “Development of a Non-Invasive Glucose Monitoring System Using Breath” (Publication No: 202541034198 A) on 02.05.2025.

Mrs. C. Nithya published a patent titled “IoT-Based Alzheimer's Patient Monitoring and GPS Tracking System” (Publication No: 202541034127 A) on 02.05.2025.

Mrs. A. P. Swarnalatha published a patent titled “Gamified Emotion Recognition and Music Therapy for Children with Autism Using YOLO” (Publication No: 202541033851 A) on 25.04.2025.

NEUROPROSTHETICS

Neuroprosthetics for memory aim to restore or enhance brain functions using electronic devices. These implants interact directly with neurons in the brain's hippocampus, the center for memory formation. Scientists use electrical stimulation and recording to mimic or support natural memory processes. They help patients with Alzheimer’s disease, stroke, or brain injury recover lost memory functions. The devices can record brain activity patterns and later replay them to trigger memory recall. Experiments on animals and human trials have shown positive effects on short-term and working memory. Projects like DARPA's RAM (Restoring Active Memory) are leading in this field.The technology combines neuroscience, AI, and microelectronics to decode brain signals. Future neuroprosthetics may offer memory enhancement even for healthy individuals. Though still in early stages, this field offers hope for treating memory disorders and cognitive decline.

- Mrs.A.P. Swarnalatha, HOD

BRAIN BRIDGE

The bridge between brain structures as computational devices and the content of mental processes hinges on the solution of several problems: (i) inference of the cognitive brain networks from neurophysiological and imaging data; (ii) inference of cognitive mind networks - interactions between mental processes such as attention and working memory - based on cognitive and behavioral experiments; and (iii) the discovery of general dynamical principles for cognition based on dynamical models. In this opinion article, we focus on the third problem and discuss how it provides the bridge between the solutions to the first two problems. We consider the possibility of creating low-dimensional dynamical models from multidimensional spatiotemporal data and its application to robust sequential cognitive processes in the context of finite processing capacity of the mind.

- Mrs.S.Keerthana, Asst.HOD

MIND-CONTROLLED PROSTHETICS

Mind-controlled prosthetics are advanced artificial limbs that respond directly to a person's brain signals. They work using brain-computer interfaces (BCIs) or electromyography (EMG) to detect nerve or muscle signals. These signals are translated into movement commands for the prosthetic limb. This technology allows users to move artificial hands, arms, or legs by simply thinking about the action. It improves mobility and independence for amputees and people with paralysis. Prosthetics can now sense pressure, grip, and temperature, offering near-natural feedback. Ongoing research includes wireless neural implants and AI integration for faster and more accurate control. Mind- controlled limbs are being developed by teams at MIT, DARPA, and Neuralink. The goal is to make prosthetics feel like real parts of the body. This innovation marks a big step toward human- machine integration in modern medicine.

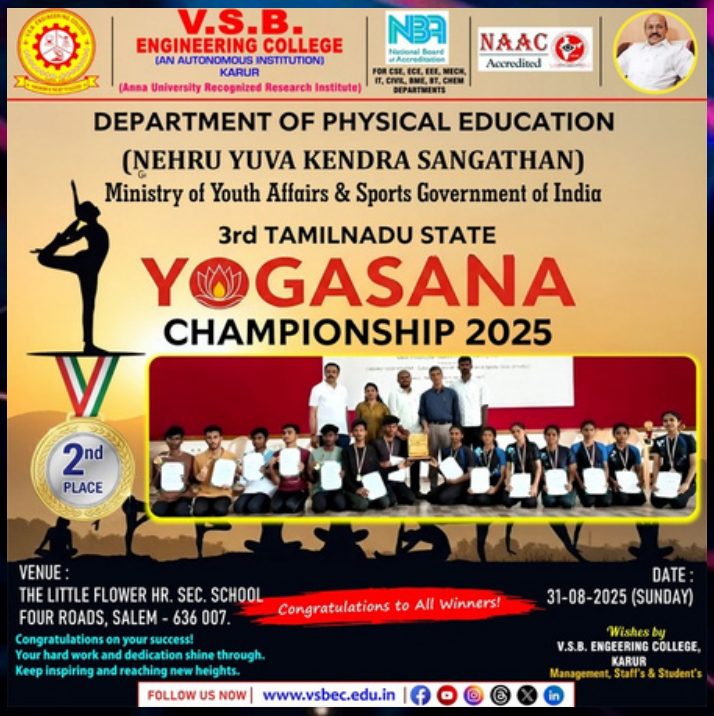
- N.Aswin, IV- Year

AUGMENTED REALITY IN SURGICAL TRAINING

Augmented Reality (AR) is revolutionizing surgical training by overlaying digital information onto real-world surgical environments. It allows medical students and surgeons to visualize anatomy, instruments, and procedural steps in 3D during simulations or actual surgeries. AR enhances spatial awareness and precision, improving hand-eye coordination and reducing training errors. By enabling interactive and repeatable practice, it shortens the learning curve for complex procedures. Trainees can rehearse rare or difficult surgeries in a risk-free virtual environment. AR systems are increasingly being integrated into laparoscopic and robotic surgery platforms. The technology also supports remote mentoring, allowing experts to guide learners in real time. Overall, AR is making surgical education more immersive, accessible, and effective.

- S.Yogesh, IV- Year

Students
ACHIVEMENTS



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Hearty Commendation to the winners of

CONGRATULATIONS!

PROJECT HACKATHON

SMART COUGH ANALYZER FOR TB SCREENING

WINNER

WINNERS :

Naveen Kumar C - III BME | Tharanithar SP - III BME
Vengata Prasath S - III BME | Gopinath.A - III BME

CASH REWARD 10,000

ORGANIZED BY, LEEWAY BIOMEDICAL, BANGALORE

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DEPARTMENT OF PHYSICAL EDUCATION

CERTIFICATE OF HONOUR

Ms. DHANUSRI A

(IV YEAR, DEPARTMENT OF BIOMEDICAL ENGIEERING)

For the proud participation in

KARATE WORLD RECORD ATTEMPT 2025

Organized by Express World Karate Masters Association (WKMA)

HELD ON 5TH OCTOBER 2025 @ S.I.V.E.T COLLEGE, CHENNAI,

With heartfelt gratitude for spreading Martial Arts Awareness and making the event a grand success!

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IV Year - BME

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for PAPER PRESENTATION

Date : 10.10.2025 | Venue : KSR College of Engineering, Tiruchengode.

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Students ACTIVITIES

HEALTHATHON 2.0

BEST NOVELTY AWARD

IIC REGIONAL MEET 2025

IV- YEAR

G. Harini, III-BME

CGPA : 8.82

K. K. PRAVEEN, III-BME

CGPA : 8.59

M.Lalitha, III-BME

CGPA : 8.39

III- YEAR

M.P. Surya, II-BME

CGPA : 8.77

Saral mano julie, II-BME

CGPA : 8.77

Dhivyadharshini, II-BME

CGPA : 8.68

R. Abinaya, II-BME

CGPA : 8.68

II- YEAR

Namitha.L, I-BME

CGPA : 8.64

Subiksha.G, I-BME

CGPA : 8.59

Roshini.J, I-BME

CGPA : 8.40

Priyadharshini.G, I-BME

CGPA : 8.21

CHIEF EDITOR:

Mrs. A.P. Swarnalatha, M.E.,
HOD OF BME

EDITORs:

Mrs. S. Keerthana, M.E.,
Asst.HOD OF BME

Mrs .C. Nithya, M.E.,
AP - BME

student editors:

N. Aswin
IV year - BME

S. Yogesh
IV year - BME