



BIO FENESTRA

"When the window opens, the world receives"

Department of Biomedical Engineering
Rajiv Gandhi College of Engineering
Nemili, Sriperumbudur



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Biomedical engineering is the application of principles and empirical discoveries of engineering to biology and medicine. It aims to bridge the gap between medicine and engineering by combining the concepts of engineering and biological sciences to the advancement in healthcare. It is evident in all stages from diagnosis and analysis to treatment and recovery.

The department of Biomedical Engineering (BME) at RGCE was established in the year 2001 when the college was started by the Gulf Returnees Educational Society.

Since then, the department has constantly engaged itself in diversified teaching and continuous research with a vision and mission of delivering qualified and highly motivated biomedical engineers into the society.

It offers both theoretical and practical exposure to young aspirants to pursue a career of their choice in the field. There are a good number of faculty members under the able guidance of an eminent Head of the Department, experienced and with expertise in technical acquaintance who strive hard to input comprehensive knowledge to the students

Further students are encouraged to undergo in plant training at prominent industries and hospitals during their course of study, participate and show their academic excellence at technical and non-technical events, and also develop their exploration skills by presenting research papers at national and international conferences, thereby aiding them to come out with flying colors.

MEMORANDUM OF UNDERSTANDING

Dr. Vimalagopalan is the MOU coordinator of the biomedical department in Rajiv Gandhi College of Engineering.

The biomedical department has signed the MOU with three hospitals namely

Global Health City by Dr. C.Emmanuel (Director - Academic and Research)

RYA Cosmo foundation by Mrs. Saritha (General Manager)

Lifeline hospital by Mrs. Nusrath S. Fathima (General Manager) and Dr. Raj Kumar (Chairman)

This memorandum of understanding is a voluntary agreement between the above listed hospitals to provide training to our students.



- Behind every great doctor is a Biomedical Engineer -

A Message from the Chair

It is a matter of great joy for me to take this opportunity to greet you all through this spectacular newsletter, Bio Fenestra and to appreciate the Department for their achievements and eventful semester.

The newsletter serves as a mouth piece of the Department, highlighting the achievements of the staffs and students besides articulating it's institutional and cultural values.

I wish to congratulate each and every student and staff who worked hard, investing their valuable time and effort in bringing out such a wonderful newsletter.

I wish the staff and the students' success in all their future endeavors. May God Bless You.

Rev. Dr. Kurian Thomas
Chairman



CEO's Desk



It gives me immense pleasure to pen a few words as prologue to the department newsletter 'Bio Fenestra'. I congratulate the department for bringing out such a striking newsletter.

Empowerment of students for their all-round development through education is the cherished motto of our institution. Today education means much more than merely acquiring knowledge. It is acquisition of knowledge and skills, building character and improving employability of our young talent, the future leadership.

I wish you all the very best for achieving greater success and scaling new heights in the coming session.

Best Wishes,
Mr. Jose Thomas

Principal's Message

It is indeed a matter of pride and privilege to pen down a congratulatory message for Bio Fenestra, the newsletter of Biomedical Department.

Academic excellence along with co-curricular activities completes the process of education and it gives me immense satisfaction that the department is progressing in all spheres of activities aiming at the overall development and personality of the student.

I wish all the success to the biomedical department and whole heartedly appreciate the commitment to bringing out such a praise worthy edition.

Best Wishes
Prof. Dr. Arokyraj U.
Principal



Foreword from HOD:



Bio Fenestra, our newsletter, is an attempt to highlight the success and achievement of Biomedical Department in increasing and stiff competitions coupled with pressure of challenging carrier and ever demanding materialistic life, it has become increasingly arduous for the individuals to maintain their prime value intact. The Department fosters confidence and courage that induce lateral thinking and the will power not to give up at times of trial and tribulations. Thus individuality as well as collectively we hope to serve for the cause of education, for the betterment of the growing generation so that they lead life triumphantly in a world 'where knowledge is free and the head is held high'.

I sincerely appreciate the efforts taken by the editor and the executive members of this newsletter to chronicle the eventful life at RGCE in a colorful fashion.

Best wishes

Prof. Dr. M. Madhu
Head of Biomedical Department

EVENTS OF THE YEAR

HOSPITAL VISIT GLOBAL HOSPITAL

A group of 44 students of the final year visited the Global Hospital on 5th March, 2016.

The dean of the hospital, Dr. Immanuel addressed the students on the role of biomedical engineers in a hospital. Following which the students were divided into batches of six and a member of the biomedical team in the hospital guided the students.

Global hospital, being the city's No. 1 multispecialty hospital served as a place for the students to upgrade the knowledge on the latest technologies in the field. All departments of the hospital were upgraded with the latest equipment. The one day visit was very beneficial and valuable for the students



RYA COSMO FOUNDATION

Students of 3rd year BME visited the RYA COSMO hospital in different batches from the month September 2015 to January 2016. Under the guidance of Prof. Dr. Vimalagopalan the students observed various departments which include ophthalmic department, physiotherapy, and biochemistry lab. Students were given brief study about ECG, X-ray and dialysis.

A Biomedical Engineer was assigned to direct the students and to lecture them about different equipment used in various specialty departments. Students procured knowledge about the application of engineering and technology principles to the domain of living or biological systems.



SAVE A LIFE

Saveetha University in association with Times foundation organized the "SAVE A LIFE MOVEMENT", the largest CPR training on World Health Day, April 7, 2016 at the university campus in Thandalam. With a sense of commitment to the society, the students of the Biomedical Department, RGCE, took part in the session. The students learned to perform a cardio pulmonary resuscitation by taking over the function of the heart and the lungs manually thereby reviving a stopped heart and in that way save a life. The participants were given a chance to practice twice on a manikin and after successfully performing the chest compression; they were certified as CPR trained. Accordingly the students were privileged to have joined hands with the institution in creating a world record for the longest CPR relay which got the Annals of Guinness World Record.



INPLANT TRAINING

- U.N.I.Q Technologies, an ISO certified company has initiated itself in providing hands on training on Software Development Life Cycle to young engineering aspirants. In that approach, students of the third and final year had enrolled themselves for in plant training and workshops in separate batches held on the 16th and 17th of July, 2016. The students benefitted greatly out of this training program on Web designing and Android which will help them in their future endeavors.
- Andrea Lissy James, third year, underwent industrial training at 'Kerala State Drugs and Pharmaceuticals Ltd.' from 22nd June to 2nd July, 2016.



- • Saveetha university organized a technical symposium "LE-INCASSO 2016" in collaboration with IET (Institute of Engineering and Technology). Two of our students Gerthruth Mary J and P Dhivya Bharathi of the final year attended a two day (16th & 17th March, 2016) workshop on 'Robotics by LABVIEW' in the event and obtained certificates after successfully completing the same.

□

- Six students from the final year participated in 'Computational Bio-Fluid Dynamics' workshop held on 26th & 27th March, 2016 at CEG Campus of Anna University. The workshop was organized by the Dept. of Biomedical Engineering as a part of their Inter College Technical Symposium "BIOSPECTRA'16".

HOSPITAL TRAINING

Excellence is an art by training and habituation and it helps in improvisation of one's career.

Training and education are critical to the success and efficient working of a hospital, in terms of providing preeminent healthcare to the patients along with safety. The department of Biomedical Engineering forms the brain of the medical team in a hospital. So as a foremost step of realizing their dreams of becoming successful biomedical engineers the students are encouraged to undertake Training at hospitals during their course of study.

- The students of the final year undertook training individually as well as in groups as part of the curriculum at prominent hospitals listed below.
 - ⊗ Meenakshi Academy of higher Education and Research, Kancheepuram.
 - ⊗ Believers Church Medical College and Hospital, Kerala.
 - ⊗ SRM Institute for Medical Science, Chennai.
 - ⊗ Prashanth Multispeciality Hospitals, Chennai.
 - ⊗ Christian Medical College, Vellore.
 - ⊗ Dr. Kumaraswamy Healthcare.
 - ⊗ ACS medical College and Hospital, Chennai.
 - ⊗ Billroth Hospitals, Chennai.

Apollo First Medical Hospital, Chennai, Jeyasekaran Hospital and Nursing Home, CSI BellpinsIndraniChelladurai Mission Hospital, Saveetha Medical College and Hospital, Sir Ivan Stedford Hospital, Sri Ramachandra University, Chennai, NLC Hospital, Neyveli.

- Jeffri Christina of Third year went for hospital training at C.S.I BellpinsIndraniChelladurai Mission Hospital from 21st to 29th June, 2016.

LEARNING WITH FUN

The final year students went on an industrial visit program to Rajarajeshwari Multi specialty Hospital located at Bangalore from 2nd to 4th April, 2016. They were accompanied by two professors of the department. The students were taught the details regarding various specialty departments; the instruments used and were equipped with ideas to develop new medical diagnostics and clinical instruments in use and how the principles of engineering and bio-behavioral sciences were being utilized. After the training the students spent their leisure time in Brindhavan Gardens, Mysore palace, Golden temple and Wonderla in and outside Bangalore.

MEDICALL - 2016

MEDICALL – 2016 is India's largest Hospital needs expo and premier medical equipment fair. The students of the third and final year visited "MEDICALL – 2016 which was held at Chennai Trade Center on 23 July 2016. They were accompanied by two staff.

Medical equipment companies from around the world exhibited and showcased their products and services. The significant feature of this expo was it aided in networking opportunities with other medical fraternity. The students had good exposure to the instruments used in the various departments of a hospital like OT, ICU, Radiology, Tele-medicine, other consumables and IT solutions. They were equipped with updates on innovation in field of healthcare, the framework of a hospital and most importantly they had an opportunity to interact with entrepreneurs from different countries.



HONOURING THE MISSILE MAN OF INDIA

Fame is something that descends on people who show exceptional qualities in their deeds and words. But it really needs much more for a person to find a place in the hearts of millions of people. A man who deserves these words is the acclaimed scientist and a noble human being Dr. APJ Abdul Kalam. On the 27th of July, 2016, a program was organized by the staff and students of the biomedical department to mark his first death anniversary.

The Principal, The HOD, Faculty members and students showed their respect to the former president by lighting candles. A floral tributary was done to honor the legacy Dr. Kalam left behind. Then the Principal addressed the gathering and motivated the students to follow the footsteps of Dr. Abdul Kalam and to strive hard to live their dreams.

Following this Ramesh Khanna, a second year student gave an astounding speech recalling the life of this legend.

As Dr. Kalam's legacy was to make the planet more livable for the present and the future generations the students along with the Principal, HOD, and staff members planted saplings around the department and few of our students joined the NSS club of RGCE in planting one lakh saplings along the highway. The tribute ended with the National Anthem.



GIFT YOUR BLOOD

Voluntary blood donors are the cornerstone of a safe and adequate supply of blood and blood products. Today accidents have increased and blood is very much in need for each and every hospital, we students don't feel so much responsible to go to blood banks and donate the blood, therefore conducting such events in college would surely make us aware of our health as well as the need of blood in this world. The department of Biomedical Engineering conducted a BLOOD DONATION camp along with the NSS club of RGCE in the campus in association with the expert medical team of Christian Medical College, Vellore on 20th of August, 2016 which the Department planned and organized

this event and to their surprise the response was huge. Many students voluntarily came up to donate their blood. The pragmatic event was organized by the HOD, staff and students of the department. The donors were investigated on their health conditions.

The camp which started at 9.30 am and went up to 3.30 p.m Refreshments were provided to those who were part of the camp. Immense care was taken to meet the requirements of students after donating the blood, so as to avoid any mishaps in the campus. The huge words and quotes on the posters had an impact on the students, attracted us and made us to donate the blood. The camp was organized in a very disciplined manner checking each and every aspect of our health

Our Prof Dr. Vimalagopalan was present in the venue, inspecting every aspect of the camp throughout the day. And we express our sincere thanks for making this a great success.



A MOMENT OF PRIDE DEPARTMENT ACHIEVEMENTS

The department beams with pride regarding the 6th semester results that were announced in the month of August, 2016. The overall pass percentage of the department is 84% which is a remarkable increase compared to last semester. The credit for this success goes to the eminent HOD and Staff members for their commitment and to the students for their sense of responsibility.

FACULTY ACHIEVEMENTS

- ★ Prof. Dr. Madhu, HOD of BME, attended the “2nd International Conference in Advances in Electrical, Electronics, Information, Communication, Bio-informatics-- (AEEICD)” organized by Prathyusha Institute of Technology and Management on 27th and 28th February, 2016.. He presented his research paper on ‘Recognition of Facial Expression using bit by bit Scanning and probabilistic matching’.
- ★ Prof. Shankar Kandaswamy attended a two day conference on ‘Computational fluid dynamics’ at CEG campus Anna University organized by the Biomedical engineers’ Association. . The conference was organized by the Dept. of Biomedical Engineering as a part of their Inter College Technical event “BIOSPECTRA’16”. The faculty members of the department took part in a Faculty Development Program arranged by The Gulf-Returnees Educational Society at the college campus during the month of June, 2016. They showed great involvement and interest in improving their expertise for the melioration the students.

STUDENTS ACHIEVEMENTS CONFERENCE

Research is formalised curiosity and creating new knowledge. Our students apart from their excellence in academics have been constantly engaging themselves in researches and innovations.

- Gerthruth Mary. J , D. John Ruban, ★ P.Dhivya Bharathi of final year, participated in the 6th International conference on Science and Innovative Engineering organised by “ORGANISATION OF SCIENCE AND INNOVATIVE ENGINEERING & TECHNOLOGY” in association with Jawahar Engineering college that was held on 3rd April,2016 and presented their paper on “MR THERMOMETRY COMBINED NON-INVASIVE HIFU TREATMENT FOR BREAST CALCIFICATION”.

- S.Vijayalakshmi & D.Nivetha of final year ★ BME presented a paper on ‘NEUROMUSCULAR TREATMENT WITH MOBILE UNIT TREATMENT’ in ‘Pratiyog 2K16’ at Jeppiar engineering college on 31st March 2016.S.Vijayalakshmi, E.Rajambal and D.Nivetha of final year BME participated at XAVION 1.0 of Agni college of Engineering and presented a paper on ‘ARTIFICIAL RETINAL PROSTHESIS UNSING BIOMEMS’. They also won in ‘Technokrieg’ technical quiz competition.

EXTRA CURRICULAR

- ★ Nandhini R, Third year, played a part in the National Level Technical Symposium “CRESTECH’16” hosted by B.S. Abdur Rehman University held on 19th March, 2016. She also bagged the 2nd prize and was awarded.
- ★ Vijayalakshmi S, Nivetha D, of the Final year and N.Akshaya of the Third year, emerged as 3rd runner up in the inter college quiz competition conducted by the Department of Electrical & Communication Engineering on 27th July, 2016 at the college premises.

PLACEMENT DETAILS

RGCE has an active placement cell for providing placement to students at their final year level. Training and skill programs are offered to prepare the students to face interviews and for recruitment.

The following is the list of companies who have entrusted confidence in our students of the 2012-2016 batch.

- ZIFO
- APPASAMY ASSOCIATES
- VISIONARY RCM
- INDIAN ORTHOCARE
- ABHIJAY HOSPITALS
- MEDLOTEK HEALTH SYSTEMS PVT. LTD.
- VINCHIP SYSTEMS PVT LTD
- SUTHERLAAND GLOBAL SERVICES

The department is proud to declare that 38 of the students belonging to above batch have been successfully placed in the mentioned companies.

PROJECT EXPO

The Department organized its Project Exhibition on Tuesday, 23 August 2016. The students of the department participated with their working projects. It was arranged in the BME Block between 9 am and 2 pm, many teams participated in the exhibition. As a part of the project exhibition, students completed the projects under the guidance of the faculty members of the department.



They demonstrated the working of their projects using charts and models to the visitors. The exhibition covered various Biomedical Projects like Automatic Nebulizer, Remote control of human brain, Digital stethoscope, Cranial electrotherapy stimulator, etc to name a few. The student and staffs of various departments visited the exhibition and interacted with the exhibitors and benefited through the various ideas exhibited. The faculty members of department of Electronics provided guidance to the students for the successful execution of the project. All the students, the participating teams as well as the students visiting the exhibition enjoyed the event. Every team member was certified and the best projects from each year were awarded.

UPCOMING EVENTS

The department is planning to have the following events in the future

- Guest Lecture by an eminent scholar
- Workshop on hands-on-training of Hospital equipment
- Conference

COMMITTEE MEMBERS

President	: Gerthruth Mary
Vice -President	: John Ruban
Secretary	: S.Vijaylakshmi
Joint Secretary	: Serah Mariam Varghese
Treasurer	: K.Sowandarya
Joint Treasurer	: Usha
Creative Head	: Andrea Lissy James
Executive Head	: Divyabharathi