



Shri Vileparle Kelvani Mandal's



Dwarkadas J. Sanghvi College of Engineering

(Approved by AICTE and Affiliated to the University of Mumbai)

ACADEMIC BULLETIN

2017-2018



**DEPARTMENT OF
BIOMEDICAL ENGINEERING**

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ABOUT THE DEPARTMENT

Biomedical Engineering Programme is to provide high quality education for transforming the armatures into professionals, capable of applying knowledge of Basic Sciences and Fundamental Engineering, to take up the challenges in health care sector and instil in them the attitudes, values and vision for continued training and inculcate leadership abilities in their chosen careers

It aims to develop skills enabling Biomedical Engineers to serve the Hospitals, National and International Industries and Government Agencies. It builds a strong foundation and develops technical skills to work professionally in the areas such as Nanotechnology and Microsystems, Rehabilitation Engineering, Biomedical Signal and Image Processing, Medical Instrumentation, Medical Imaging, Nuclear Medicine Robotics in Medicine, Networking and Information systems in hospitals; to develop core competency in the field of Biomedical Engineering to gain technical expertise in biology and medicine for effective contribution in the development and improvement of health care solutions & to train and motivate students for pursuing higher education and research for developing cutting edge technologies.

Vision

To strive for academic excellence to develop responsible, competent professionals, equipped with advanced technical knowledge and high professional ethics to support healthcare industry.

Mission

1. To provide high quality education through innovative teaching learning processes.
2. To provide a forum for industry institute interaction, with a view to groom budding engineers as employable Biomedical Engineering professionals.
3. To inculcate research interest to develop sustainable diagnostic and life supporting tools/ systems that cater to the needs of medical profession.
4. To empower the students and instil in them a sense of belongingness and responsibility towards the society.

Program Outcomes

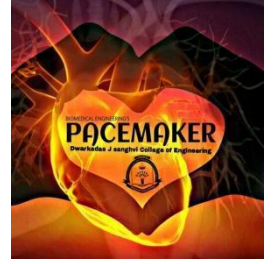
Engineering Graduates will be able to:

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 appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding 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: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
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.

STUDENT CHAPTER

PACEMAKER



The extended Pacemaker Committee is as follows:

Chairperson

Pooja Nair

Co-Chairperson

Priyank Lapsiya

Vice Chairperson(Admin)

Tirath Doshi

Vice Chairperson(Acad.)

Sakshi Manerkar

Vice Chairperson(Technical)

Jay Shah

Secretary

Vineeta Khanapuri

Co-Secretary

Shreya Devkar

Editor

Pooja Yadav

Treasurer

Sejal Gothi

Co-Editor

Neha Agnihotri

Creative Head

Raj Patel

Co-Treasurer

Dhwani Teli

Jahnvi Kansara

Creative Team

Sasha Hakhu

Simran Pawaskar

Event Manager

Hardik Khandhedia

Publicity Head

Sugandha Patel

Hospitality Head

Rutuza Zinjal

Event Planner

Dhara Desai

Publicity Team

Riva Karia

Catering

Manali Salvi

Prashali Vichare

Logistics Head

Paarth Parekh

Merchandise Co-ordinator

Madhura Deshmukh

Dr. Manali J. Godse
(Head of Department.)

Workshops and Seminars

- The academic year 2017-2018 started with a Pre-placement Workshop by Mrs. Pooja Sukheja on. It was a three-day workshop conducted on 11/07/2017, 13/07/2017, and 14/07/2017. It proved to be of great significance for those who aspire to get placed right after graduating.
- On 13/07/2017, a guest Lecture was conducted by Mr. Deep Modi (R&D Engineer), Ms. Drashti Gandhi, Mr. Neeraj Lodaya from Collateral Medical on guiding students for selecting projects. It was attended by third year students in majority.
- By the next week, a workshop on Embedded platform was organized by Dr. Prasad Joshi which was attended by students from all over.

Visit to All India Institute of Physical Medicine for SE and BE Biomedical Students



B.E. Biomedical, Year: 2017-18

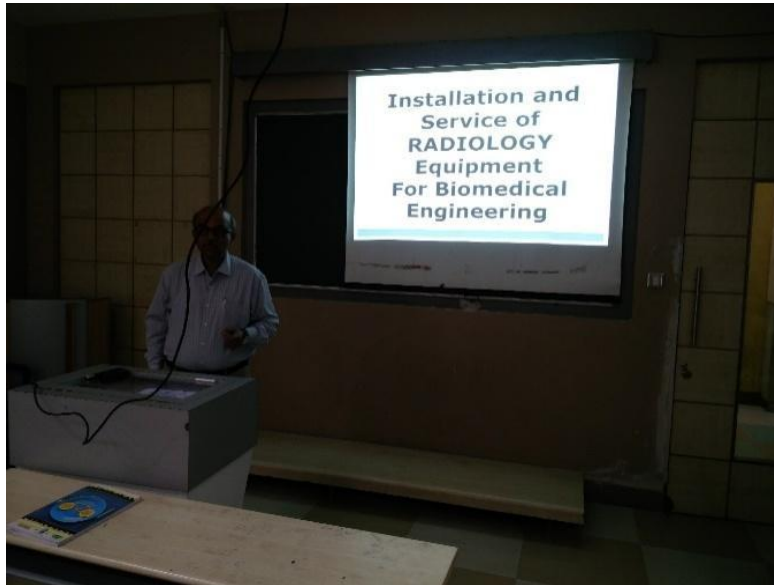
A visit to the All India Institute of Physical Medicine & Rehabilitation (AIIPMR) was arranged by the Biomedical Department of Dwarkadas J. Sanghvi College of Engineering for the B.E. and S.E. students. It was held on 21st September, 2017. The students were instructed to arrive at AIIPMR, Block A around 1:15 pm. This visit was organized in order to give the students a better idea about the biomechanics of various prostheses and orthoses.



The visit was organised by Prof. Mangal Dandekar and hosted by visiting faculty, Prof. Jeenal Shah for S.E. students. It was highly advantageous to the students of semester 3 and semester 7, as they had subjects like biomaterials, prosthetics, and orthotics. It was held on- 14 September 2017 for S.E. students and went on for 2 hours 2:00 pm-4:00 pm.

The department of prosthetics was explained and showed to the students by Mr. Bhavani Prasad, a post-graduate student at AIIPMR. The explanation included a brief on different prosthetics and rehabilitation processes.

Guest Lecture by on Installation and Maintenance of Biomedical Equipment



Guest lecture of Mr. Bhalachandra Sasrabuddhe was held on 19 Sep. 17 for BE Biomedical Students. 19 Students attained the lecture. Mr. Sahasrabuddhe have an experience of 30 years in industry and has worked as service engineering in renowned companies like GE Healthcare and SIEMENS etc.

Mr. Saharabuddhe conducted lecture for 3 Hrs. It was on “Installation and maintenance of Medical Equipment’s”. During his lecture he covered Radiology Equipment’s and System available in Hospital. He also discussed the floor plan for installation of Heavy medical equipment. A brief on the latest and upcoming CT Machine was also made. He also talked about the application and working of above mentioned equipment.

Visit to Nanavati Hospital to Radiology, Physiotherapy and Pathology Departments



A visit to the Nanavati Hospital was arranged by the Biomedical Department of Dwarkadas J. Sanghvi College of Engineering for the B.E. and T.E students. It was held on 22nd September, 2017. The senior physiotherapist demonstrated the various therapeutic equipments used in their department.

The college expresses its gratitude towards the Biomedical as well as Physiotherapy Department of the Nanavati hospital for providing the B.E. students with an opportunity to see the various biomedical modalities used in health care.

The objective of attaining practical as well as theoretical knowledge was attained by the hospital visit. Students got to know the actual working and manufacturing of various machines used in the hospitals. Since Nanavati is one of the best hospital, students got acquainted with the latest machines and got equipped with it.

Visit to KEM Hospital for S.E Biomedical Students



S.E Biomedical, Year: 2017-18

A visit to 'Department of Anatomy' at K.E.M hospital was arranged by Dwarkadas J Sanghvi College of Engineering for S.E Biomedical students (A.Y-2017-18) for four days. This visit was to give the students more practical knowledge about the study of human anatomy and physiology. The visit was organised by Prof. Mangal Dandekar who coordinated with the hospital and arranged lectures by Dr. Rashmi Patil and Dr. Abhijeet Dhende. The visit took place on 22nd, 25th, 27th and 28th September 2017 and about 32 students had come for the visit

Workshop on Ventilator By Maquet



On 29th September 2017 a seminar/workshop was arranged for the students of Third year of biomedical department. Staffs of “Maquet Medical India Pvt Ltd”, Miss Gayatri Aiyer and Miss Maitri Mehta, with their two executive were present for delivering a lecture on ventilators. Professor Vaibhavi Sonetha and Professor Vivek Deodeshmukh introduced the students to the respective staff of Maquet Medical Pvt Ltd and gave a short description about their company and the equipments. Further on Ms. Gayatri Aiyer started with the session.



3-D PRINTING INFORMATIVE SESSION



The informative session for Biomedical Department was arranged by 'Imaginarium', India's largest 3D printing company. The session was organized on 5th October 2017, by the biomedical department students of D.J Sanghvi College of Engineering. It was conducted by Mr. Mitul Parekh. All the students from the Biomedical Department attended the session for learning something new and fun and expanding their knowledge to the current trends in the biomedical sector. It was a short session from 11:30 am to 1:00 p.m., followed by a Q/A session.

Through this informative session, Students got to know the actual working and manufacturing of various machines used in 3D printing and development of organs using these machines.

Mr. Mitul Parekh also provided us an opportunity to come and attend day workshops to learn more about this technology to Imaginarium. We thoroughly enjoyed the session and we look forward to conducting and attending the day workshops, whenever held.

Guest Lecture by Mr. Shrikant Patole the founder of Vighneshwar Enterprises on Entrepreneurship



A seminar was arranged by Prof. Mrunal Rane for the Biomedical students of third year. The speakers of this seminar were Mr. Shrikant Patole and Mr. Amit Doshi. This seminar was conducted from 9:00 am to 9.30 am on 5th floor lecture room 2 . In this seminar they elaborated the concept of their startup as well devoted some time for the future in this industry.

In the seminar, Mr. Shrikant and Mr. Amit elaborated about their startup work and provided guidance to the aspiring biomedical engineers. They rooted the idea in the field of blood banking and detection tests to motivate the students to come up with a project in the same domain. They discussed the current industrial trends in biomedical sector explaining how it is a growing branch with a better scope.

Session on Higher studies in USA and preparation for GRE by Mr. Adwaith Menon



This session was conducted on 11th January 2018 by Mr. Adwaith Menon, who had pursued his Masters Degree from the State University of New York at Binghamton, (also referred to as Binghamton University). In this brief session, he explained us about the procedure involved with GRE while applying masters.

He was kind enough to hand all of us the brochure of the university he is currently associated with (State University of New York at Binghamton), for us to get more hands on information about our branch and it's requirements.

The session was followed by Q/A, where in students asked sir regarding their doubts related to masters and GRE. Sir answered all of the questions which were asked in class and gave us his phone number and email address for any kind of future reference or further assistance.

Guest Lecture on Bio-Security by Dr. Manish Shah



This session was conducted on 16th January 2018, Students from second year and third year Biomedical Department attended this seminar, the session started at 10:15 am and commenced at 11:40 am. In this session, students were briefed about the aspects of bio-security in today's world. And how with the current technological advancements in the industry, the demand security systems are also increasing rapidly.

Components of defense in depth include antivirus software, firewalls, anti-spyware programs, hierarchical passwords, intrusion detection and biometric verification. In addition to electronic countermeasures, physical protection of business sites along with comprehensive and ongoing personnel training enhances the security of vital data against compromise, theft or destruction. Although, it was a short session, it was very informative and it guided us towards new spectrum of biomedical field.

Guest lecture on Pattern Recognition by Dr. Mehul Sampat, Senior Software Engineer at BioClinica



A technical guest lecture was conducted by Dr. Mehul Sampat Senior Software Engineer at BioClinica, USA on January 24th 2018 Dr. Mehul Sampat is an alumni of the biomedical engineering department who has done his PhD from the Howard University. The topic of the lecture was ‘Introduction to Pattern Recognition: Applications in Biomedical Engineering’. This guest lecture was organised by PACEMAKERS of D.J Sanghvi College of Engineering. It was conducted to give a brief introduction to the biomedical students about one of the applications of biomedical engineering.

Overall, the lecture was very informative and helpful to students. The event was a success and it was concluded from the feedback that more such lectures be conducted in the future. Students from the second, third and fourth year had attended this lecture. At the end of the lecture, Dr. Mehul Sampat was presented by a gift as a small token of appreciation by Professor Vivek Deodeshmukh.

A workshop on Proteus conducted by Mr. Parth Bhatt



On 10th February workshop on Proteus software was conducted, for the students of SE and TE of Biomedical department was arranged by Professor Rashmi Ravi Kumar. The workshop was conducted under the guidance of Mr. Parth Bhatt who also happens to be the alumni of biomedical department. At present he is working for BioTech as development engineer. Mr Parth Bhatt gave various tips and tricks to use the software which will be helpful for the students in the long run.

The students were well aware with the basic usage of Proteus software by the end of the session thanks to the mentoring provided. Prof. Vivek Deodeshmukh presented the memento on behalf of Pacemaker committee to our respected alumni Parth Bhatt at the end of the session.



Inspirational talk on Entrepreneurship by Mr. Sreejit Pillai, Vice President of Sancfum Wealth Management



Mr. Sreejit Pillai, Vice President of Sancfum Wealth Management has delivered an inspirational lecture on “Entrepreneurship” at DJSCE on March 10, 2018. He introduced the different aspects of entrepreneurship and emphasized that zeal and great idea are the only ingredients in a recipe for business start-up. He mentioned that the reason that people do not start their new ventures in a country like India is due to non-awareness amongst the population of India and decides to go for jobs in private or government sectors so as to minimize the risk. Therefore, he emphasized to raise the basic awareness of entrepreneurial concepts and to enable students to identify and learn how to make a mind-set to take up entrepreneurship as a challenging career. The lecture motivated the students to work hard and start a new venture through adequate forward planning and the execution of the plans. At last, Dr. Vaibhavi Sonetha, Assistant Professor thanked Mr. Sreejit Pillai for his valuable time and motivational words.

Guest Lecture on Medical Image Processing software by Mr. Sahastrabuddhe

The students from third year Biomedical Department attended this seminar, it was an informative session, it started from 1:00 pm and commenced at 3:30 pm. The session was very interesting and intriguing for students. We were told about different areas of brain mapping and about how to take MRI, CT and X-Ray.

Sir was kind enough to show us the slides as well as videos, which displayed and depicted information related to MRI and he also told us about importance of digital image processing and digital signal processing related in this field.

The session was followed by Q/A, where in students asked sir regarding their doubts related to the medical imaging. Sir answered all of the questions which were asked in class and gave us contact details for any kind of future reference or further assistance.

Medical Fair 2018

Professor Shruti Dodani organized a visit to India's 24th international Medical fair and exhibition for the TE and the BE students on 16th March 2018. Students also visited the medical fair on the other two days till 18th March 2018. The fair took place at Bombay Convention & Exhibition Centre, Goregaon(West). The visit was organized to provide the students a better insight of the technological advancement in the medical realm.

519 exhibitors from 18 different countries put up various devices and machines for display in the fair. The conference with accompanying exhibition put the thematic focus on practice-oriented Medical trend topics.



Hospital Visit to Tata Memorial Hospital for Nuclear Medicine



A visit to TATA MEMORIAL HOSPITAL was held on 27th March 2018. 25 students along with Prof. Vivek Deodeshmukh attended the seminar on Nuclear Medicine followed by the visit.

A lecture of Dr. V. Rangarajan was held at the Auditorium of TATA Memorial Hospital. Dr. Rangrajan explained the various Nuclear Medical Instruments and evolution of Nuclear Medicine Instrumentation. Generation of radiopharmaceuticals, radiation waste management and safety were studied. Later students visited various Nuclear Medicine Installations and facilities.

Nanavati Hospital visit to EEG, ECG, EMG, Sonography, Mammography, and Endoscopy



A visit to NANAVATI HOSPITAL, Vile parle (west), Mumbai was arranged for the students of 6th Semester B. E. Biomedical of Dwarkadas J. Sanghvi College Of Engineering on 5th April, 2018, Thursday. A batch of 30 students along with 2 faculty member had visited the hospital.

The visit started at 8:30 am and were welcomed by team of biomedical engineers of Nanavati hospital .A group of 15 students was made and then a visit to the different departments of the hospital like OPD, Radiology, Endoscopy, Ultrasound, etc was arranged. A detailed explanation regarding each department was given during the visit. By 1:30pm in the noon both the batches completed learning the basics of few instruments. Overall, the visit was very informative and enjoyable. We came to know regarding the role of Hospital and Biomedical in the overall health management.

PACEMAKER'S SYMPOSIUM 2018

Symposium on “Latest Trends in Biomedical Engineering”, and the events organised were “Brain Vista” and “Flip and Win” and “Bio-Hunt”.



Pacemaker Committee 2017-18 with the faculty of Biomedical Department

The symposium on 'Recent Trends in Biomedical Engineering' was organized on the 13th of April, 2018. We had invited two key speakers for the same who held incredibly interactive and knowledgeable seminar sessions. The first speaker was Dr. Paresh Bhanushali who gave a lecture on the topic of “Point of Care Testing”. Followed by him was Mr. Ajit Shringarpure who gave a live session analysis on the use and working of a Lithotripter. Dr. Paresh Bhanushali is the technical director at Yashraj Biotechnology Ltd. and Mr. Ajit Shringarpure is an entrepreneur and service engineer at PWM Systems.



Students watching the lithotripter demonstration by Mr. Ajit Shringarpure.

These sessions were of great interest to the students and played a role in understanding the practical applications and scope of our field in the future. Post the seminar, there were a number of fun activities lined up for the students. Some of which were- “Brain Vista” and “Flip and Win”. These events were hosted and judged by the student committee as well. It helped enhance the entire learning experience and increased the excitement and enthusiasm of the event. Winners were presented with vouchers and certificates.



Guests being felicitated by Prof. Vivek Deodeshmukh



Fun Event "Bio-Hunt"



"Flip and Win"

Student Achievements

Sr No	Name	CGPA	Year of Passing
1	Shreya Bhandarkar	9.37	2018
2	Anju Nambiar	9.36	2018
3	Priyank Lapsiya	8.77	2018

Staff Achievement



Our Professor Dr.(Mrs.) Mrunal R. Rane received a doctorate degree form IIT Bombay