

School of Engineering

Department of Biomedical Engineering

The details of the suggested Board of Members for the Department of Biomedical Engineering are shown below:

S.no	Name of the Board Member	Designation	Institute/Industry
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Internal Members

1	Dr.P.Brindha Devi	HOD&Convener	Vels University
2	Mrs.R.J.Hemalatha	Assistant Professor	Vels University
3	Mrs.Ananthi	Assistant Professor	Vels University
4	Ms.Syed Uzma Farheen	Student Member	Vels University

External Expert Members

5	Dr.M.Anburajan	Professor and Head	SRM University,Chennai.
6	Mr.Godfrey Earnest	Project Manager	Biomedical Engineering Company,Chennai



VELS UNIVERSITY



VELS INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)

PALLAVARAM - CHENNAI - INDIA
NAAC ACCREDITED

Department of Bio-Engineering
B.E. Biomedical Engineering
School of Engineering

The meeting of the Board of Studies of B.E Biomedical Engineering of the Department of Bio-Engineering, School of Engineering was held on 8th July 2016 at 3P.M. in the Pharmacy conference hall of the School of Pharmaceutical Sciences. The curriculum and syllabus for B.E Biomedical Engineering proposed to be introduced by the school of Engineering from the academic year 2015-2016 with the CBCS (Choice Based Credit System) pattern.

The following persons were invited to attend the meeting:

S.No	Name and Address (Members of the Board of Studies)	Designation
1.	Dr. M. Anburajan, Professor and Head Department of Biomedical Engineering Faculty of Engineering SRM University Kattankulathur Chennai – 603 203 9790840279 Email: hod.biomed@ktr.srmuniv.ac.in	External Expert
2.	Mr. Godfrey Earnest (Project Manager) Biomedical Engineering Company No. 37, Pushpa Nagar Main Road, Nungambakkam Chennai – 600034 (+91)-7053118506	External Expert (Industry)
3.	Mrs. Hemalatha Assistant Professor, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Internal Member

4.	Mrs. Ananthi, Assistant Professor, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Internal Member
5.	Ms. Syed Uzma Farheem, II B.E. Biomedical Engineering, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Student Member
6.	Dr. P. Brindha Devi Head, Department of Bio-Engineering, School of Engineering, Vels University, Pallavaram, Chennai-117.	Convener

The following Suggestion were made in the BOS meeting.

B.E. Biomedical Engineering

- The core subject Biomaterials and Artificial Organs was introduced in Semester III. As per CBCS a Generic elective course and one Discipline Specific Elective course was included in Semester III.
- The core paper Probability and Random process was replaced with the new paper named Statistics and Numerical Methods in Semester IV.
- Inplant Training was introduced in Semester IV.
- Mini Project was added in semester VI.
- Prosthetic Engineering Core paper was added in Semester VIII.
- Total number of credits was changed to 195.
- The Discipline Specific Elective Course "Assist Device" was renamed as "Human Assist Devices".

The following subjects have to be moved to Discipline Specific Elective Courses:

- Analog and Digital IC's
- Analog and Digital IC's Laboratory
- Biofluidics and Dynamics
- Physiological Modelling
- Telemedicine
- Nano-Electronics
- Hospital Management
- Rehabilitation Engineering
- Trouble Shooting of Medical Instruments
- Advance Medical Imaging Devices

- Fiber optics and Lasers in Medicine
- Neural Engineering

• The following subjects have to be moved to Generic Elective Courses:

- Computational Fluid dynamics analysis
- Robotics and Automation in Medicine
- Biophotonics
- Electrophysiology for human system
- Bioethics and Biosafety
- Entrepreneurship Development
- Regulatory aspects in Bioscience
- Professional Ethics in Engineering

• The following subjects have to be moved to Skill Enhancement Elective Courses:

- Personality Development-I
- Personality Development-II
- Personality Development-III
- Personality Development-IV

All the above suggestion in the syllabus was carried out to equip the students to compete with other university students for job and research, to face the competitive exams at national level; this syllabus revision was carried out.

The BOS Committee members scrutinized the papers and content, the members approved the syllabus B.E Biomedical Engineering from the academic year 2015-2016 onwards.

During BOS meeting, the following members were present .

S.No	Name and Address (Members of the Board of Studies)	Designation	Signature
I.	Dr. M. Anburajan, Professor and Head Department of Biomedical Engineering Faculty of Engineering SRM University Kattankulathur Chennai – 603 203 9790840279 Email: hod.biomed@ktr.srmuniv.ac.in	External Expert	M. Anburajan 8/5/16 Dr. M. ANBURAJAN Professor / HOD Department of Biomedical engineering SRM University, Kattankulathur - 603 203.

2.	Mr. Godfrey Earnest (Project Manager) Biomedical Engineering Company No. 37, Pushpa Nagar Main Road, Nungambakkam Chennai – 600034 (+91)-7053118506	External Expert (Industry)	Godfrey
3.	Mrs. Hemalatha Assistant Professor, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Internal Member	Hemalatha
4.	Mrs. Ananthi, Assistant Professor, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Internal Member	Ananthi
5.	Ms. Syed Uzma Farheem, II B.E. Biomedical Engineering, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Student Member	Syed Farheem
6.	Dr. P. Brindha Devi Head Department of Bio-Engineering, School of Engineering, Vels University, Pallavaram, Chennai-117.	Convener	P.B. A HOD Department of Biotechnology School of Engineering Vels University, Pallavaram, Chennai – 600

**B.E. Biomedical Engineering
CURRICULUM**

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER III						
AECC	15GBE204	Environmental Science and Engineering	3	0	0	3
CORE	15GBE012	Mathematics III	3	1	0	4
CORE	15EBM004	Pathology and Microbiology	3	1	0	3
CORE	15EBM005	Biomaterials and Artificial Organs	3	0	0	3
CORE	15EBM006	Biocontrol system	3	1	0	3
OSE	15EBM...	Discipline Specific Elective I	3	0	0	3
GE	15EBM...	Generic Elective I	3	0	0	3
CORE	15EBM007	Pathology and Microbiology Laboratory	0	0	3	2
OSE	15EBM...	Discipline Specific Elective II Laboratory	0	0	3	2
		TOTAL	21	3	6	26

SEMESTER IV

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
CORE	15GBE015	Statistics and Numerical Methods	3	1	0	3
CORE	15EBM008	Medical Physics	3	0	0	3
CORE	15EBM009	Microprocessor, Microcontroller and System Design	3	1	0	3
CORE	15EBM010	Electronic Circuits	3	1	0	3
SE	15EBM...	Discipline Specific Elective III	3	1	0	3
E	15EBM...	Generic Elective II	3	0	0	3
EC	15EBM...	Skill Enhancement Elective II	2	0	0	2
CORE	15EBM011	Microprocessor and Microcontroller Laboratory	0	0	3	2
CORE	15EBM012	Electronic Circuits Laboratory	0	0	3	2
CORE	15EBM013	Inplant training	0	0	0	2
		TOTAL	20	4	6	26

B.E. Biomedical Engineering Curriculum

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER V						
CORE	15EBM014	Biomedical Instrumentation	3	1	0	4
CORE	15EBM015	Sensors and Measurements	3	1	0	4
CORE	15EBM016	Medical Optics	3	1	0	3
DSE	15EBM...	Discipline Specific Elective IV	3	1	0	3
DSE	15EBM...	Discipline Specific Elective V	3	0	0	3
GE	15EBM...	Generic Elective III	3	0	0	3
SEC	15EBM...	Skill Enhancement Elective III	2	0	0	2
CORE	15EBM017	Biomedical Instrumentation Laboratory	0	0	3	2
CORE	15EBM018	Sensors and Measurements Laboratory	0	0	3	2
TOTAL			20	4	6	26
SEMESTER VI						
Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
CORE	15EBM019	Diagnostic and Therapeutic Equipment	3	1	0	3
CORE	15EBM020	Digital Signal Image processing	3	1	0	3
CORE	15EBM021	Radiological Equipment	3	1	0	3
DSE	15EBM...	Discipline Specific Elective VI	3	0	0	3
DSE	15EBM...	Discipline Specific Elective VII	3	1	0	3
GE	15EBM...	Generic Elective IV	3	0	0	3
CORE	15EBM022	Digital Signal Image processing Laboratory	0	0	3	2
CORE	15EBM023	Diagnostic and Therapeutic Equipment Lab	0	0	3	2
CORE	15EBM024	Minor Project	0	0	0	2
TOTAL			18	4	6	26

**B.E. Biomedical Engineering
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Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER VII						
CORE	15EBM025	Pattern Recognition and Neural Networks	3	1	0	4
CORE	15EBM026	Medical Informatics	3	0	0	3
CORE	15EBM027	Virtual Instrumentation Design For Medical Systems	3	1	0	3
CORE	15EBM028	Biomechanics	3	1	0	3
DSE	15EBM...	Discipline Specific Elective VIII	3	0	0	3
DSE	15EBM...	Discipline Specific Elective IX	3	0	0	3
GE	15EBM...	Generic Elective V	3	0	0	3
CORE	15EBM029	Virtual Instrumentation Design For Medical Systems Lab	0	0	3	2
CORE	15EBM020	Medical Image Processing and Analysis Lab	0	0	3	2
			21	3	6	26
SEMESTER VIII						
Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
CORE	15EBM021	Prosthetic Engineering	3	0	0	3
GE	15EBM...	Generic Elective VI	3	0	0	3
CORE	15EBM022	Project Work	0	0	21	12
		TOTAL	6	0	21	18

B.E. Biomedical Engineering
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List of Discipline Specific Elective Courses

Code No.	Course
15EBM101	Analog and Digital IC's
15EBM102	Analog and Digital IC's Laboratory
15EBM103	Bio fluidics and Dynamics
15EBM104	Physiological Modeling
15EBM105	Telemedicine
15EBM106	Nano-Electronics
15EBM107	Hospital Management
15EBM108	Rehabilitation Engineering
15EBM109	Trouble Shooting of Medical Instruments
15EBM110	Advanced Medical Imaging Devices
15EBM111	Design and Development of Medical Devices
15EBM112	Bio MEM's and Nanotechnology
15EBM113	Human Assist Devices
15EBM114	Fiber optics and Lasers in Medicine
15EBM115	Neural Engineering