



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

**Minutes of Board of Studies in Biomedical Instrumentation Engineering
held on 2.05.2024 at 10.00 am.**

Members List:

Internal Members:

Dr. Judith Justin, - **Chairperson**
Professor & Head,
Department of Biomedical Instrumentation
Engineering,
School of Engineering.

Dr.R.Vanithamani, - **Member**
Professor, Department of Biomedical
Instrumentation Engineering,
School of Engineering.

Dr.R.Shijitha, - **Member**
Assistant Professor, Department of Biomedical
Instrumentation Engineering,
School of Engineering.

Mrs. S. Gowri, - **Member**
Assistant Professor, Department of Biomedical
Instrumentation Engineering,
School of Engineering.

External Members:

Dr.Mallikarjun S.Holi, - **Academician**
Professor & Dean (Academic),
Department of Electronics & Instrumentation
Engineering.,
University B.D.T. College of Engineering,
Davangere – 577 004. Karnataka.

Mrs. Saranya Venkatraman, - **Industrial Expert**
Associate Project Manager,
Robert Bosch Engineering
and Business Solutions Ltd.,
CHIL SEZ IT Park, Coimbatore-35.

Invited Members:

Mrs.S.Pavithra,
 Assistant Professor,
 Department of Biomedical Instrumentation
 Engineering, School of Engineering

Invited Member (Student Representative)

Vijayashree B, 20134UEB20, IV BMIE

Invited member (Alumni Representative)

Prathanya Shree. C 19080UEB16, (2019-
 2023) Batch, Alumni

Discussions of the Meeting (pertinent to the agenda)

1.	Passing the syllabi of Specialization papers applicable for Ph.D. scholars admitted during January, 2024. <p style="text-align: center;">Not Applicable</p>
2.	Framing the syllabi from 3 rd to 6 th semester for the following programmes: <ul style="list-style-type: none"> * B.Com. with minor specialization programmes * B.Sc. Augmented Reality and Virtual Reality <p style="text-align: center;">Not Applicable</p>
3.	Introduction of Four-year Integrated Teacher Education Programme <p style="text-align: center;">Not Applicable</p>
4.	Passing the revised Scheme of Instruction and Examination and Syllabi from 3 rd to 8 th Semesters applicable for the Undergraduate Engineering students admitted from the academic year 2024-2025 & onwards. Discussion: <ul style="list-style-type: none"> • The Board recommended the revised Scheme of Instruction and Syllabi from 3rd to 8th Semesters for B.E. Biomedical Instrumentation Engineering students admitted from the academic year 2024-2025 & onwards is enclosed as Annexure I. • The Board recommended the change of the Value Added Course 21BEBV01 Biomedical Instrumentation as 24BEBV01 PCB Design for B.E. Biomedical Instrumentation Engineering students admitted from the academic year 2024-2025 & onwards is enclosed as Annexure I. • The Part – IV Non Credit Mandatory Courses: A. Ability Enhancement Compulsory Courses (AECC) for the B.E. students admitted from the academic year 2024-2025 & onwards are listed below. The syllabus is enclosed as Annexure I. <ul style="list-style-type: none"> ➤ 24BEMC01 Environmental Science ➤ 24BEMC02 Constitution of India ➤ 24BEMC03 Consumer Affairs

- 24BEMC04 Essence of Indian Knowledge Tradition
- 24BECS01 Communication Skills
- 24BEMC05 Design Thinking
- 24BESS01 Soft Skills
- 24BEMC06 Professional Ethics
- 24BEMC07 Disaster Management

- The **Open Elective Courses** offered by the **Department of Biomedical Instrumentation Engineering** for the students admitted in the other Engineering departments from the academic year 2024-2025 & onwards are listed below. The syllabus is enclosed as **Annexure II**.

- 24BEBO01 IoT for Personal Healthcare
- 24BEBO02 Telehealth Technology
- 24BEBO03 Diagnostic Instrumentation

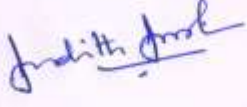

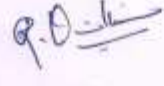

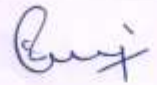


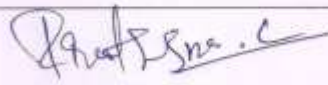
- All Practical components are renamed as Laboratory.
- The Board recommended the following courses for the award of Honors **B.E. Honours (AI in Healthcare)** degree applicable for **B.E. Biomedical Instrumentation Engineering** students admitted from the academic year 2024-2025 & onwards. The syllabus is enclosed as **Annexure III**.

B.E. Honours (AI in Healthcare)

<i>Semester</i>	<i>Course Code</i>	<i>Name of the Course/Component</i>
V	24BEBH01	IoT in Healthcare
	24BEBH02	Predictive Analytics in Healthcare
VI	24BEBH03	Virtual Reality and Augmented Reality in Healthcare
	24BEBH04	AI in Healthcare
To be completed between 5 th to 7 th semesters	24BEBH51/ -	MOOC (12 Weeks Course in SWAYAM – NPTEL)
	24BEBH60	
	24BEBH61/ -	MOOC (12 Weeks Course in SWAYAM – NPTEL)
	24BEBH70	

- The Board recommended the following courses for the award of Minor Specialization (**Bioinstrumentation**) under the Department of **Biomedical Instrumentation Engineering** applicable for the students admitted in the other Engineering departments from the academic year 2024-2025 & onwards. The syllabus is enclosed as **Annexure IV**.

Minor Specialization (Bioinstrumentation)		
<i>Semester</i>	<i>Course Code</i>	<i>Name of the Course/Component</i>
V	24BEBE01	Human Assist Devices
	24BEBE04	Rehabilitation Engineering
VI	24BEBE06	Artificial Organs and Implants
	24BEBE09	Patient Safety, Standards and Ethics
To be completed between 5th to 7th semesters	24BEBM01/ -	MOOC (12 Weeks Course in SWAYAM – NPTEL)
	24BEBM10	
	24BEBM11/ -	MOOC (12 Weeks Course in SWAYAM – NPTEL)
	24BEBM20	
	<ul style="list-style-type: none"> • The external expert suggested the following: <ul style="list-style-type: none"> ➤ The text and reference books are to be listed separately for each course. ➤ Embedded system and IoT to be listed under core courses. ➤ COVID testing techniques can be included in the course Medical Biochemistry ➤ Remove 4th unit content in course Body Area Networks ➤ Revise 3rd unit of course Medical Imaging Techniques and replace Nuclear Imaging with Optical Coherence Tomography and Thermography as it is redundant with Nuclear Imaging contents in Radiology. 	
5.	Implementation of the following UGC Guidelines: <ul style="list-style-type: none"> * Credit-Based Course on Pedagogical Aspects for Teaching Divyangjans and Persons with Specific Learning Disabilities (SLDs) * “Accessibility Guidelines and Standards for Higher Education Institutions and Universities” <p style="text-align: center;">Will be implemented</p>	
6.	Any other <p style="text-align: center;">Not Applicable</p>	
Suggestions by Students/Alumni/Employers on Curriculum and Syllabus		
<p>Vijayashree B, 20134UEB20, IV B.E. Biomedical Instrumentation Engineering As the Biomedical Instrumentation Engineering Programme is a blend of Biology, Physics, Electronics, and Computer Science, it offers a diverse interdisciplinary knowledge base. Through internships in both hospitals and industrial settings, students gain practical experience and get better placements.</p> <p>Prathanya Shree. C 19080UEB16, (2019-2023) Batch, Alumni. The online courses from SWAYAM NPTEL usually offer good stuff to learn, and getting certified in them can be helpful for career growth. Also, open electives offered by other departments allow students to explore diverse subjects beyond their major field of study.</p>		

Members Present		Signature
Chairperson		
Dr. Judith Justin, Professor & Head, Department of Biomedical Instrumentation Engineering, School of Engineering.	-	
External Members		
Dr. Mallikarjun S.Holi, Professor & Dean (Academic), Department of Electronics & Instrumentation Engineering., University B.D.T. College of Engineering, Davangere – 577 004. Karnataka.	-	
Mrs. Saranya Venkatraman, Associate Project Manager, Robert Bosch Engineering and Business Solutions Ltd. CHIL SEZ IT Park, Coimbatore-35.	-	Absent
Internal Members		
Dr.R. Vanithamani, Professor, Department of Biomedical Instrumentation Engineering, School of Engineering.	-	
Dr. R. Shijitha, Assistant Professor, Department of Biomedical Instrumentation Engineering, School of Engineering.	-	
Mrs. S. Gowri, Assistant Professor, Department of Biomedical Instrumentation Engineering, School of Engineering.	-	
Invited Members (Staff)		
Mrs. S. Pavithra Assistant Professor, Department of Biomedical Instrumentation Engineering, School of Engineering.	-	
Invited Member (Student Representative)		
Vijayashree B, 20134UEB20, IV BMIE	-	
Invited member (Alumni Representative)		
Prathanya Shree. C 19080UEB16, (2019-2023) Batch, Alumni	-	

1. Revision of Courses in already existing Programme (if any)

a. Revision of courses without title change (2024-2025):

Course code	Course title	Semester	Credits	Percentage of revision
24BEBC01	Human Anatomy and Physiology	III	3	40%
24BEBC02	Medical Biochemistry	III	3	50%
24BEBC09	Analog and Digital Integrated Circuits	IV	3	40%
24BEBC12	Analog and Digital Communication	V	3	40%
24BEBC14	Medical Therapeutic Equipment	V	3	30%
24BEBC16	Microprocessor and Microcontrollers	V	3	40%
24BEBC17	Diagnostic and Therapeutic Equipment Laboratory	VI	3	20%
24BEBC19	ICU and Operation Theatre Equipment	VI	3	20%
24BEBC22	Digital Image Processing	VI	3	15%
24BEBC23	Microprocessor and Microcontroller Laboratory	VI	1	20%
24BEBE04	Rehabilitation Engineering	V	3	70%
24BEBO03	Diagnostic Instrumentation	VIII	3	45%

b. Introduction of courses/Revision of Courses with title change (2024-2025)

Course code	Course title	Semester	Credits	Type (Specify- New/Title change)	Percentage of revision (if new indicate as new)
24BEES17	Electronic Devices and Circuits	III	3	Title Change	40%
24BEES18	Electronic Devices and Circuits Laboratory	III	1	Title Change	-
24BEBC05	Biomedical Sensors and Measurement Laboratory	III	1	Title Change	-
24BEBC09	Analog and Digital Integrated Circuits	IV	3	Title Change	40%
24BEES24	Numerical Techniques	IV	3	New	New
24BEBC07	Signal Processing	IV	3	New	New
24BEBC10	Integrated Circuits Laboratory	IV	1	Title Change	-
24BEBC11	Signal Processing Laboratory	V	1	New	New
24BEBE01	Human Assist Devices	V	3	New	New
24BEBE03	Brain Computer Interface	V	3	New	New
24BEBC17	Diagnostic and Therapeutic Equipment Laboratory	V	1	Title Change	-

24BEBC18	Microprocessors and Microcontrollers Laboratory	V	1	Title Change	-
24BEBE06	Artificial Organs and Implants	VI	3	New	New
24BEBE25	Medical Informatics	VI	3	New	New
24BEBC21	Embedded Systems and IoMT	VI	3	New	New
24BEBC23	Virtual Instrumentation Laboratory	VI	1	Title Change	-
24BEBC24	Digital Image Processing Laboratory	VI	1	Title Change	-
24BEBE09	Patient Safety, Standards and Ethics	VII	3	New	New
24BEBE30	Bio-Inspired Optimization Techniques	VII	3	New	New
24BEBE32	Computer Vision	VII	3	New	New
24BEBH01	IoT in Healthcare	V	3	Title Change	-
24BEBH02	Predictive Analytics in Healthcare	V	3	New	New
24BEBH03	Virtual Reality and Augmented Reality in Healthcare	VI	3	New	New
24BEBH04	AI in Health Care	VII	3	New	New
24BEBE26	Artificial Intelligence and Machine Learning	VI	3	New	New
24BEBO01	IoT for Personal Healthcare	VII	3	New	New
24BEBO02	Telehealth Technology	VIII	3	New	New

2. New Programme (if any) introduced- Nil

3. Part IV Component of UG/ ~~Part II Component of PG~~ (if any):

a. Revision of courses in Part IV Component of UG/ ~~Part II Component of PG~~ without title change

Course code	Course title	Semester	Credits	Percentage of revision
-	-	-	-	-

b. Introduction of courses/Revision of Courses in Part IV Component of UG/ Part-II Component of PG-with title change

Course code	Course title	Semester	Credits	Type(Specify-New/Title change)	Percentage of revision (if new indicate as new)
24BEBV01	Value Added Course – PCB Design	3	NCMC	New	New
24BEMC04	Essence of Indian Knowledge Tradition	3	NCMC	New	New
24BEMC05	Design Thinking	3	NCMC	New	New
24BEMC06	Professional Ethics	3	NCMC	New	New

4. Deletion or removal of courses to be specified in detail (if any):

Course code	Course title	Semester	Credits	Deletion
21BEHS03	Human Values and Medical Ethics	III	3	Deleted
21BEBS03	Signals and Systems	III	3	Deleted
21BEBC26	Special Medical Equipment Practicals	VII	1.5	Deleted
21BEBC16	Digital Signal Processing for Biomedical Engineering	V	3	Deleted
21BEBC17	Digital Signal Processing Practicals	V	1.5	Deleted
21BEBE01	Medical Physics	V	3	Deleted
21BEBE03	Neural Engineering	V	3	Deleted
21BEBE09	Advanced Bio analytical and therapeutic techniques	VI	3	Deleted
21BEBE21	Object Oriented Programming with C++	V	3	Deleted
21BEBE22	Soft Computing	V	3	Deleted
21BEBE24	Embedded Systems	VI	3	Deleted
21BEBE27	Telehealth technology	VI	3	Deleted
21BEBE29	VLSI Design	VI	3	Deleted
21BEBE32	Internet Technology	VII	3	Deleted