



*Hindusthan College of Engineering and Technology*  
Approved by AICTE, New Delhi, Accredited with 'A' Grade by NAAC  
(An Autonomous Institution, Affiliated to Anna University, Chennai)  
Valley Campus, Pollachi Highway, Coimbatore-641032

**DEPARTMENT OF BIOMEDICAL ENGINEERING**  
**MINUTES OF BOARD OF STUDIES MEETING**

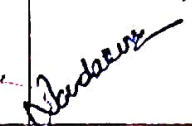

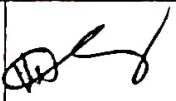






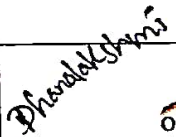



Name of the Department: BIOMEDICAL ENGINEERING


Date: 19.05.2023

The ninth Board of Studies meeting of Regulation 2022 for the Academic Year 2022-2023, Even Semester conducted on 19.05.2023 at 10:30 A.M. in Library Board Room in hybrid mode, Hindusthan College Engineering and Technology and the Google Meet Link is <https://meet.google.com/yzv-unnn-xat>.

The following members were present

S.No.	Name of the Member	Department	Position	Signature
1	Dr.S.Saravana Sundaram, Professor and Head, Department of Biomedical Engineering,HICET	Department of Biomedical Engineering	Chairman	
2.	Dr. S.J. Thiruvengadam, Professor Thiyagarajar College of Engineering ,Madurai-625015 sjtece@tce.edu	Department of Electronics and Communication Engineering	University Nominee	
3.	Dr. Vidhya Priya, Prof & Head Department of Biomedical Engineering, PSG College of Technology, Coimbatore. rvp.bme@psgtech.ac.in	Department of Biomedical Engineering	Academic Expert	
4.	Dr.P. Manimegalai, M.E., Ph.D. Associate Professor Department of Biomedical Engineering, Karunya Institute of Technology and Science, Coimbatore. manimegalai@karunya.edu	Department of Biomedical Engineering	Academic Expert	
5.	B. Thirugnanam, Associate Professor and Head, NIT Rourkela, Odisha, Department of Biotechnology and Medical Engineering, thirugnanam.a@nitrkl.ac.in	Department of Biotechnology and Medical Engineering,	Member from QS rated institution	Online

6.	Dr.N.Nandakumar, Industry Expert,Prime Medical systems	Prime Medical systems	Industry Expert	
7.	Ms.Mano Alagammai, Batch (2018-22 batch)	CTS trainee Coimbatore	Alumni Member	
8.	Dr.T.Murugeswari,Assoc Professor/BME	Department of Biomedical Engineering	Internal Member	
9.	Dr.M.Ganga, Assoc Professor/BME	Department of Biomedical Engineering	Internal Member	
10.	Mrs.S. Shobha Christila,AP/BME	Department of Biomedical Engineering	Internal Member	
11.	Mrs M Deeparani, AP/BME	Department of Biomedical Engineering	Internal Member	
12.	Mr. K. Gobinath, AP/BME	Department of Biomedical Engineering	Internal Member	
13.	Mrs.M.Kirthika, , AP/BME	Department of Biomedical Engineering	Internal Member	
14.	Mr.Devasivagami	Department of Biomedical Engineering	Internal Member	
15.	Ms.Dhivya R	Department of Biomedical Engineering	Internal Member	-AB-
16.	Ms.Dhanalakshmi	Department of Biomedical Engineering	Internal Member	 ors
17.	Mr.P.Radha krishnan	Department of Biomedical Engineering	Internal Member	
18.	Ms.Raja Rajeswari Chandhini P	Department of Biomedical Engineering	Internal Member	-AB-
19.	Mr.B.Sonaimuthi	Department of Biomedical Engineering	Student-II BME	
20.	Ms.M.Bavithra	Department of Biomedical Engineering	Student-III BME	

21.	Mrs.S.Revathi Sundar Rajan ,M/O, Mr. S Siddharth, Student-IV BME	Department of Biomedical Engineering	Parent Member	
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- Due to his/ her preoccupied schedule Ms.Dhivya R, Ms.Raja Rajeswari Chandhini P not attend the meeting.
  - The chairman of the BoS, **Dr. S. Saravanasundaram** welcomed all the dignitaries for the meeting. **Chairman / Chairperson** introduced the BoS members. The feedback received on the curriculum by the stakeholders was presented.
  - Chairman also gave an outline of the changes to be made in the curriculum given by the Curriculum Development Cell (CDC) & Pre-Board of studies (Pre-BoS)/ Department Advisory Committee (DAC).
  - The **Chairman / Chairperson** presented the suggestions given by the experts and the action taken report during the Previous BoS meeting which was held during 08.02.2022 was approved.
  - **Chairman / Chairperson** also gave an outline of the changes to be made in the curriculum given by the Curriculum Development Cell (CDC) & Department Advisory Committee (DAC) and emphasized the importance of including the employability enhancement courses, life skill, soft skill, design thinking and IP related courses in the curriculum to be in line with the industry needs.
- Chairman presentation of revision/updation.
  - Any other approval from the members
  - Completed and current semester value-added courses.
  - The curriculum and syllabus for the new courses
  - CO –PO mapping was discussed for all the courses.

Also,

**The following are the recommendations put forth by the BoS members,**

- Honor and Minor for regulation 2021 are put forwarded by HoD.
- Hospital System Management In Regulation 2019 Theory with lab component has been converted into theory course.

**Regulation 2022**

- Academic Expert (**Dr.P.Manimegalai**) suggested that 3D Printing /Rapid Prototyping course can be introduced instead of Medical Coding.
- University Nominee (**Dr. S.J. Thiruvengadam**) suggested that there is Overlap of courses in honors with specialization programme that can be replaced by industry integrated courses.
- Academic Expert (**Dr.P.Manimegalai**) suggested that Minor Degree course Diagnostic and Therapeutic Medical Equipments course can be included.
- University Nominee (**Dr. S.J. Thiruvengadam**) suggested that in third semester Electron Devices and Circuits last 5<sup>th</sup> unit Communication Systems topics not correlated with the title of the course.
- Academic Expert (**Dr.Vidhya priya**) suggested that Communication systems can be included in Signals and Systems syllabus.
- University Nominee (**Dr. S.J. Thiruvengadam**) suggested that in the first unit of signals and systems communication systems can be included.
- Academic Expert (**Dr.P.Manimegalai**) suggested that in Electron Devices and Circuits LCD, OLED topics can be included in first unit.
- Member from QS rated institution (**Dr.A.Thirugnanam**) suggested that in Signals and Systems analogous systems can be removed.

- Academic Expert (**Dr.P.Manimegalai**) suggested that in Unit 5 application parts of biochemistry give a relevant title for the respective unit.
- University Nominee (**Dr. S.J. Thiruvengadam**) suggested that Logic Gates Topics can be added in Unit-I in of Digital Electronics.
- Academic Expert (**Dr.P.Manimegalai**) suggested that Telemedicine subjects can be included in Elective.
- Academic Expert (**Dr.P.Manimegalai**) suggested that in Electron Devices and Circuits Superposition Theorem is not needed since its been considered in electrical systems.
- Academic Expert (**Dr.P.Manimegalai**) suggested that National Health Policy topic can be included in Hospital System Management.
- Academic Expert (**Dr.Vidhya priya**) suggested that In Honors Degree programme Modeling of bones ,Properties of bones ,Hills Model topics can be included in the syllabus.
- University Nominee (**Dr. S.J. Thiruvengadam**) In honors degree courses similar courses can be removed and Industry 4.0 health care topics can be included.
- Industry Expert (**Dr.N.Nandakumar**), suggested that in programming related courses and gate topics can be included in the curriculum.
- Academic Expert (**Dr.P.Manimegalai**) suggested that in 3D Printing course can be introduced to honors degree programme.
- Industry Expert (**Dr.N.Nandakumar**), suggested that in minor degree programme basic biomedical courses can be included.
- Curriculum is framed in line with CO,PO, PSO.

**The following resolutions are made in the Board of Studies meeting:**

- In almost all the courses, changes have been done as per the current needs.
- The Curriculum and Syllabus of Regulation 2022 for the III Semester Subjects- 22MAXXX were introduced and passed by Science and Humanities board and permitted to move on Academic Council by the BoS members of Biomedical Engineering for the students admitted during the academic year 2022-2023 onwards.
- Chairman conveyed that, the Suggestions given by the Board of Studies members are to be incorporated in Regulation 2022.
- Chairman conveyed that, the Suggestions given by the Previous Board of Studies members are ratified and resolved.
- Based on the department suggestion, PAC members suggestions and stakeholder suggestions following Vision ,Mission where drafted,

**VISION OF THE DEPARTMENT**

**DV1:** To produce technically aspiring Biomedical Engineers with continuous enrichment in the research and innovation with high ethical standard to ensure quality health care society.

**MISSION OF THE DEPARTMENT**

**DM1:** To provide a value-based biomedical engineering education utilizing contemporary technologies and equipment.

**DM2:** To Assemble a cohesive group of biomedical engineers to promote technologies via research and development and creativity.

**DM3:** To offer solutions to the healthcare industry that are infused with moral principles and lifelong learning.

1. <<if Department specific Board of Studies resolutions/Common

Suggestions: >>

- Panel Members Suggested more new courses can be introduces in the new regulation which can be useful for placement and higher studies.

The meeting came to an end at 4 pm with vote of thanks.



**Chairman / Chairperson( B o S )**

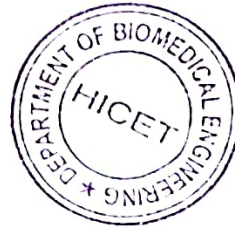
**Chairman - BoS  
BME - HICET**

Enclose:

1. Previous BoS Minutes-ATR
2. Regulation 2022
3. Curriculum and Syllabi

Copy:

1. The Principal
2. Dean Academics
3. Controller of Examinations
4. All the Members of BoS
5. File Copy





# Hindusthan College of Engineering and Technology

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Accredited by NBA (AERO, AUTO, CIVIL, CSE, ECE, EEE, IT, MECH, MECHATRONICS)

Accredited by NAAC with 'A++' Grade, An ISO Certified Institution

Valley Campus, Colmbatore - 641 032, Tamilnadu, INDIA

Tel: +91 422 4242424

www.hicet.ac.in

## MINUTES OF BOARD OF STUDIES MEETING

Name of the Department: BIOMEDICAL ENGINEERING

Date: 14.12.2023

The TENTH Board of Studies meeting of Regulation 2022 for the Academic Year 2023-2024, Even Semester was conducted on 14.12.2023 at 11:30 A.M. in Library Board Room in hybrid mode, Hindusthan College of Engineering and Technology and the Google Meet Link <https://meet.google.com/tyy-kpyh-ofr>.

The following members were present

S.No.	Name of the Member	Department	Position
1.	Dr.S.Saravana Sundaram, Professor and Head, Department of Biomedical Engineering,HICET	Department of Biomedical Engineering	Chairman
2.	Dr. .J.Thiruvengadam, Professor Thiyagarajar College of Engineering , Madurai-625015 sjtece@tce.edu	Department of Electronics and Communication Engineering	University Nominee

3.	Dr. Vidhya Priya, Prof & Head Department of Biomedical Engineering, PSG College of Technology, Coimbatore. rvp.bme@psgtech.ac.in	Department of Biomedical Engineering	Academic Expert
4.	Dr.P. Manimegalai, M.E., Ph.D. Associate Professor Department of Biomedical Engineering, Karunya Institute of Technology and Science, Coimbatore. manimegalaip@karunya.edu	Department of Biomedical Engineering	Academic Expert
5.	A. Thirugnanam, Associate Professor and Head, NIT Rourkela, Odisha, Department of Biotechnology and Medical Engineering, thirugnanam.a@nitrkl.ac.in	Department of Biotechnology and Medical Engineering,	Member from QS rated institution
6.	Dr .N.Nandakumar, Industry Expert, Prime Medical systems	Prime Medical systems	Industry Expert
7.	Ms.Mano Ranjitham Batch (2018-22 batch)	IIT Madras	Alumni Member
8.	Dr.T.Murugeswari, Assoc Professor/BME	Department of Biomedical Engineering	Internal Member
9.	Dr.M.Ganga, Assoc Professor/BME	Department of Biomedical Engineering	Internal Member
10.	Mrs.S. Shobha Christila, AP/BME	Department of Biomedical Engineering	Internal Member

11.	Mrs M Deeparani, AP/BME	Department of Biomedical Engineering	Internal Member
12.	Mrs.M.Kirthika,AP/BME	Department of Biomedical Engineering	Internal Member
13.	Ms.Sella Dharshini C,AP/BME	Department of Biomedical Engineering	Internal Member
14.	Ms.Nivedha D.R,AP/BME	Department of Biomedical Engineering	Internal Member
15.	Ms.Patricia Nancy S,AP/BME	Department of Biomedical Engineering	Internal Member
16.	Mayura Gurubaran S	Department of Biomedical Engineering	Student-II BME
17.	Mr.B.Sonaimuthi	Department of Biomedical Engineering	Student-III BME
18.	Ms.M.Bavithra	Department of Biomedical Engineering	Student-IV BME
19.	M/0 ,Ms.Shonofer,(IV BME)	Department of Biomedical Engineering	Parent Member

- Due to his/ her preoccupied schedule Dr. Thirugnanam, Associate Professor and Head, NIT Rourkela not attend the meeting.
- The chairman of the BoS, **Dr. S. Saravanasundaram** welcomed all the dignitaries for the meeting. **Chairman / Chairperson** introduced the BoS members.
- The feedback received on the curriculum by the stakeholders was presented.
- Chairman also gave an outline of the changes to be made in the curriculum given by the Curriculum Development Cell (CDC) & Pre-Board of studies (Pre-BoS)/ Department Advisory Committee (DAC).
- The **Chairman / Chairperson** presented the suggestions given by the experts and the action taken report during the Previous BoS meeting which was held during 19.05.2023 was approved.
- **Chairman / Chairperson** also gave an outline of the changes to be made in the curriculum given by the Curriculum Development Cell (CDC) & Department Advisory Committee (DAC) and emphasized the importance of including the employability enhancement courses, life skill, soft skill, design thinking and IPR related courses in the curriculum to be in line with the industry needs.

- Chairman presentation of revision/updation.
- Any other approval from the members
- Completed and current semester value-added courses.
- The curriculum and syllabus for the new courses

Also,

The following are the recommendations put forth by the BoS members,

- Honor and Minor for regulation 2021 are put forwarded by HoD.
- Regulation 2022
- Academic Expert (Dr.P.Manimegalai) suggested that suggested that In Biomedical Instrumentation syllabus, instead of 'analysis' topic, the 'acquisition' topic can be included.
- University Nominee (Dr. S.J. Thiruvengadam) suggested that In Experiment no.6 using PPG can be included. Furthermore, signal conditioning units may be incorporated in the fifth unit in place of the assistive device.
- Academic Expert (Dr.P.Manimegalai) suggested that The topics such as Bio-amplifier, Amplifier, Filters and Isolated oscillators are suggested for include in signal conditioning unit. The subject expert recommends updating the most recent edition of the textbook on biomedical instrumentation.
- University Nominee (Dr. S.J. Thiruvengadam) suggested that instead of linear integrated circuit syllabus, the signal conditioning circuits syllabus can be included.
- Academic Expert (Dr.Vidhya priya) suggested that that in 'Microprocessor and Microcontroller in Medical Application' Subject, the course objectives will be updated based on blooms taxonomy level. In CO2, the word 'Recall' can be changed as 'Remember'.
- University Nominee (Dr. S.J. Thiruvengadam) suggested that Goyanger's book is an excellent resource for learning about Microprocessors and Microcontrollers in Medical Applications.
- Academic Expert (Dr.P.Manimegalai) suggested that the syllabus of "Sensors and Measurements" can be replaced by the syllabus of "Biosensors and Transducers".
- Academic Expert (Dr.Vidhya priya ) suggested that in HAP Lab Exp No.8 can be replaced by some other experiment.
- Academic Expert (Dr.P.Manimegalai) suggested that in Integrated Circuits Lab some more experiments may be included.
- University Nominee (Dr. S.J. Thiruvengadam) suggested that in Honour course:

Brain Computer Interface Member suggested that some inter relevant required for machine learning concept in this syllabus.

- Academic Expert (Dr.P.Manimegalai) suggested that Machine Learning and Artificial Intelligence Avoid overlapping with previous subject Text book
- Industry Expert (Dr.N.Nandakumar), suggested that Medical Health Technology the total no of hours will be changed to 9 hours per unit in addition to that Suggested that add Big data, Cloud computing in the syllabus and In reference books: R1 need to be updated.

The following resolutions are made in the Board of Studies meeting:

- In almost all the courses, changes have been done as per the current needs.
- The Curriculum and Syllabus of Regulation 2022 for the IV Semester Subjects- 22HE4101-IPR and startups and 21HE6072-IPR were introduced and passed by Mechanical board and permitted to move on Academic Council by the BoS members of Biomedical Engineering for the students admitted during the academic year 2022-2023 onwards and 2021-2022 onwards .
- 22HE2071 Design thinking & 22HE2072 Softskills-2 were introduced and passed by S&H board and Department Of Corporate Relations respectively ,Permitted to move on Academic Council by the BoS members of Biomedical Engineering for the students admitted during the academic year 2022-2023 onwards.
- Chairman conveyed that, the Suggestions given by the Board of Studies members are to be incorporated in Regulation 2022.
- Chairman conveyed that, the Suggestions given by the Previous Board of Studies members are ratified and resolved.

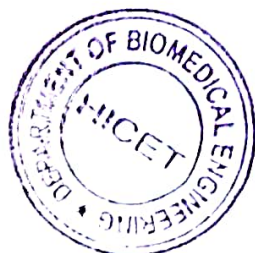
1. <<if Department specific Board of Studies resolutions/Common

Suggestions: >>

- Panel Members Suggested more new courses can be introduces in the new regulation which can be useful for placement and higher studies.

The meeting came to an end at 1 pm with vote of thanks.

  
Chairman / Chairperson( B o S )



Chairman - 2022  
BME - JMCET

**Enclose:**

1. Previous BoS Minutes-ATR
2. Regulation 2022
3. Curriculum and Syllabi

**Copy:**

1. The Principal
2. Dean Academics
3. Controller of Examinations
4. All the Members of BoS
5. File Copy