

# JERUSALEM COLLEGE OF ENGINEERING

[An Autonomous Institution affiliated to Anna University]

**Minutes of the 2<sup>nd</sup> meeting of Board of Studies for the Department of Biomedical Engineering held on 27/06/2020 at 10.30 a.m. through Google Meet.**

## Members present:

| S. no. | Name   | Category                      |
|--------|--|-------------------------------|
| 1      | Dr. Sheeja V. Francis,<br>Prof. and HOD- BME<br>Jerusalem College of Engineering   | Chairman                      |
| 2      | Dr. S. Nirmala Devi,<br>Professor, Dept. Of ECE<br>CEG, Anna University  | Anna<br>University<br>Nominee |
| 3      | Dr.K.Thayalan,<br>Principal,<br>Radiation Physics Department<br>Dr. Kamakshi Institute of<br>Medical Sciences & Research,<br>Pallikaranai, Chennai-100 | Subject<br>Expert             |
| 4      | Dr. G. Velmathi,<br>Professor,<br>SENSE-School of Electronics<br>Engineering,<br>VIT, Chennai  | Subject<br>Expert             |
| 5      | Mr.GaneshBalasubramanian,<br>Senior Deputy Director of<br>Engineering,<br>Amphenol OmniConnect India<br>Pvt Ltd.                                       | Industry                      |
| 6      | Mr. Sarathy K,<br>Assistant Engineer,<br>KilpaukMedical College<br>Chennai-10.   | Alumni                        |

| S.no. | Name  | Category |
|-------|---|----------|
| 7     | Dr. J. Sivakamasundari,<br>Associate Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering. | Member   |
| 8     | Dr. J. Sofia Bobby,<br>Associate Professor,<br>Department of BME<br>Jerusalem College of<br>Engineering.      | Member   |
| 9     | Ms. M.S. Jeyalakshmi,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering    | Member   |
| 10    | Ms. S. Purnima,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering.         | Member   |
| 11    | Ms. C.L. Annapoorani,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering.   | Member   |
| 12    | Ms.Nivetha.B<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering.            | Member   |

At the outset, the Chairman welcomed the members for the 2<sup>nd</sup> meeting of the Board of Studies through Google Meet. The Chairman highlighted the distinctiveness of the curriculum designed for the undergraduate programme offered by the Department of Biomedical Engineering under regulation 2019 which was approved in the first Board of Studies meeting held on **22.07.2019**. She informed the members that this meeting was focused on finalization of syllabi of courses offered in the second year of the respective

study by considering all the suggestions given by the respected experts from University and Industry.

The agenda points were discussed in detail as mentioned below:

**Item No. 1 - Approval of Syllabi for the UG courses offered in II year [3<sup>rd</sup> and 4<sup>th</sup> semesters of Batch 2019 - 23] of the Department of Biomedical Engineering under R2019, Jerusalem college of Engineering**

The syllabi of both theory and laboratory courses that are offered in the third and fourth semesters for undergraduate students following R2019 was presented by the Chairman. The following suggestions given by members were incorporated and the syllabi were finalized.

- 'Open source data analytics software (Asure /Tableau Software)' can be included in **Biosensors and Measurements** course offered in III Semester.
- 'Mapping of lipid profile' may be included in unit III of **Clinical Biochemistry** course offered in III Semester.
- 'Natural and Artificial Immunity' may be included in unit V of **Pathology and Microbiology** offered in IV Semester

**Item No. 2-Approval of syllabi of Professional / open electives offered by the department in the 4<sup>th</sup> semester for the Batch 2019 - 23.**

The Chairman informed the members that professional electives and open electives are to be offered for undergraduate students of Batch 2019 – 23 from the fifth semester only.

The list of open electives to be offered by the BME Department for students of other departments in Semester IV was displayed by the Chairman and the syllabi of each of the courses was discussed and finalized.

The Chairman informed the members that students can take up SWAYAM courses as open electives after due validation from the Class Advisor, HoD and Dean Academics.

The following suggestions given by members were incorporated and the syllabi were finalized.

- 'Nature of sound, ultrasound and its application' can be included in unit IV of the course **Biosensors and its Applications** offered as an open elective.



- 'Bioinspired technologies' can be included in the course **Human Biology For Engineers**

**Item No. 4- Ratification and Approval of the revised panel of Examiners (Both Internal & External) to be forwarded to Academic Council**

Members approved the revised list of internal and external examiners that was presented by the Chairman.

**Item No. 6 - Methodologies for innovative Teaching and Evaluation Techniques**

The Chairman elaborated on various digital teaching methods such as Google Meets, Zoom, Google Classroom, Cisco WebEx, WhatsApp and other platforms which were adopted by faculty members for teaching and evaluation during this COVID 19 crisis period. The Chairman also highlighted the enthusiastic participation of their students and faculty in online courses and programmes. The JCE COURSERA CAMPUS PROGRAM has been a huge success among JCE students and faculty. Some of the courses attended are listed below:

**COMMON COURSES ATTENDED BY STUDENTS**

1. Mind Control: Managing Your Mental Health During COVID-19 - University of Toronto
2. COVID-19: What You Need to Know
3. English for Effective Business Speaking - The Hong Kong University of Science and Technology
4. Introduction to Public Speaking - University of Washington
5. Covid-19 Contact Tracing - John Hopkins University

**SPECIALIZED COURSES ATTENDED BY STUDENTS**

1. Neural Networks and Deep Learning - Deeplearning.ai
2. Biomedical Visualization - University of Glasgow
3. Bioinformatic Methods I - University of California San diego
4. Drug Discovery - University of California San diego
5. Pharmaceutical and Medical Device Innovations - University of Minnesota
6. Disease Screening in Public Health - University of Lausanne
7. MRI Fundamentals - KAIST
8. Medical Neuroscience - Duke University

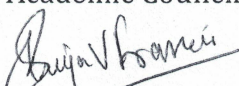
The table below shows the statistics of enrolment and course completion of students in the BME Department.


|  |            |
|--|------------|
| <b>Total enrolments</b>                                | <b>127</b> |
| <b>Total unique courses</b>                            | <b>41</b>  |
| <b>Total course completions</b>                        | <b>115</b> |
| <b>Learners who have completed more than 2 courses</b> | <b>109</b> |

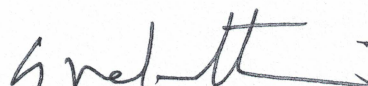
- Special Lectures, Workshops, Symposia are conducted via Biomedical Engineering Association
- Students are involved in Social Awareness Camps and provided with Medical equipment training via two active student clubs namely Healthaware Club and Bioequip Club.
- Design Contest was conducted on Innovation Day to encourage out of box thinking and innovative solutions
- Hospital Training was given for students at Tagore Medical College and Hospital
- Final year Biomedical students visited research laboratories at IISC, Bangalore on Open day.
- Department has Vibrant Alumni Interaction in the form of Training, Internships, and Webinars
- During the lock down period programmes such as COVID Awareness Quiz Contests, Video, Posters, Projects, Webinars etc., were conducted by the department to keep our students abreast with the latest developments in the field.

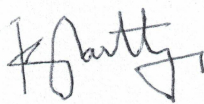
The members also suggested that short demonstrational videos may be used to provide online learning for lab courses.


The meeting ended by the Chairman thanking all the members for their presence and valuable suggestions which she ensured would be incorporated and forwarded to the Academic Council.

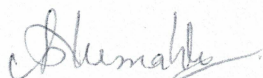
  
(Dr. Sheeja V. Francis)  
CHAIRMAN

  
(Dr. K. Thayalan)  
SUBJECT EXPERT I

  
(Dr. G. Velmathi)  
SUBJECT EXPERT 2

  
(Mr. Sarathy K)  
ALUMNI

  
(Mr. Ganesh Balasubramanian)  
INDUSTRY EXPERT

  
(Dr. S. Nirmala Devi)  
ANNA UNIVERSITY NOMINEE



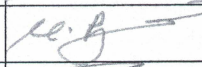
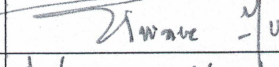
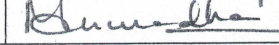
**JERUSALEM COLLEGE OF ENGINEERING**  
**(An Autonomous Institution, Affiliated to Anna University, Chennai)**

**DEPARTMENT OF BIOMEDICAL ENGINEERING**

**SECOND BOARD OF STUDIES MEETING**

**27.06.2020**

**Special Invitees:**

| S.No. | Name                       | Designation    | Signature   |
|-------|----------------------------|----------------|---|
| 1     | Dr. M. Ramalingam          | Director       |  |
| 2     | Dr. S. Prince Arockia Doss | Principal      |  |
| 3     | Dr. P. Anuradha            | Dean Academics |  |



**JERUSALEM COLLEGE OF ENGINEERING**  
**( AnAutonomous institution affiliated by Anna University, Chennai)**

**Minutes of the 1<sup>st</sup> meeting of Board of Studies for the Department of Biomedical Engineering held on 22.07.2019 at 10: am in Board Room.**

**Members present:**

| S. no. | Name   | Category                      |
|--------|--|-------------------------------|
| 1      | Dr. Sheeja V. Francis,<br>Prof. and HOD- BME<br>Jerusalem College of Engineering   | Chairman                      |
| 2      | Dr. S. Nirmala Devi,<br>Associate Professor, Dept. Of ECE<br>CEG, Anna University  | Anna<br>University<br>Nominee |
| 3      | Dr.Thayalan,<br>Principal,<br>Radiation Physics Department<br>Dr. Kamakshi Institute of Medical<br>Sciences & Research,<br>Pallikaranai, Chennai-100 | Subject<br>Expert             |
| 4      | Dr. G. Velmathy,<br>Professor,<br>School of Electronics Engineering,<br>VIT, Chennai   | Subject<br>Expert             |
| 5      | Mr.GaneshBalasubramanian,<br>Senior Deputy Director of<br>Engineering,<br>Amphenol OmniConnect India Pvt<br>Ltd.                                     | Industry                      |
| 6      | Mr. Sarathy K,<br>Assistant Engineer,<br>KilpaukMedical College<br>Chennai-10.   | Alumni                        |

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| 8     | Dr. J. Sofia Bobby,<br>Associate Professor,<br>Department of BME<br>Jerusalem College of<br>Engineering.      | Member   |
| 9     | Ms. M.S. Jeyalakshmi,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering    | Member   |
| 10    | Ms. S. Purnima,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering.         | Member   |
| 11    | Ms. C.L. Annapoorani,<br>Assistant Professor,<br>Department of BME,<br>Jerusalem College of<br>Engineering.   | Member   |



At the outset, the Chairman welcomed the members for attending the 1<sup>st</sup> meeting of the Board of Studies. The agenda points were discussed in detail as mentioned below:

**Item No. 1- Ratification for continuation of Anna University Curriculum and Syllabi for II, III and IV year students under R2017 and R2013 respectively and II PG and II MBA of R2017, Anna University.**

The Chairman informed the members that the present second and third year B.E (BME) students admitted under Anna University will continue to follow regulation 2017 and the present fourth year students under Anna University will follow regulation 2013. As the college has now been granted autonomous status, the Chairman sought approval from the members to continue with the same curriculum and syllabi with the flexibility of conducting examinations (both assessment and End Semester) through the office of Controller of Examinations, Jerusalem College of Engineering. To this, the members accepted to the proposal of the Chairman.

**Item No. 2 - Approval of UG curriculum for Semester I – VIII**

The Chairman presented the curriculum for B.E./B.Tech., programmes designed for R2019, to be followed from the academic year 2019-20. The presentation started by defining the PEOs, POs, PSOs and their mappings. The curriculum of each semester was discussed in detail and the summary of the number of credits allotted for each category was informed by the Chairman and the same was approved by the members.

- Circuits pertaining to Biomedical Application to be included in Electronic Circuits for Biomedical Engineers – Isolation Circuits, Patient Leakage Current Circuits.

**Item No. 3 - Approval of Syllabi for the first year technical courses**

The syllabi of the technical subjects that occur in the first and second semester of R2019 was presented by the Chairman. Suggestions given by members were incorporated and the syllabi were finalized as below.

- Engineering Basics – Unit IV - I Sem
- Design Appreciation Laboratory – ECE Component - I Sem
  - Mini project that covers Passive Components and Soldering Techniques Studied may be included.
- Electric Circuits and Electronic Devices - II Sem
- Electric Circuits and Electronic Devices Laboratory - II Sem
  - Include UJT characteristics

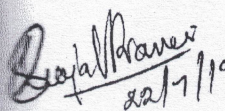



**Item No. 5- Methodologies for innovative Teaching and Evaluation Techniques**

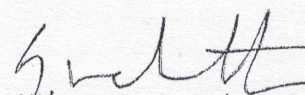
The Chairman suggested different innovative methods for teaching and evaluation. The members also gave suggestions and ideas that could be implemented for better teaching – learning environment. Suggestions given by members were

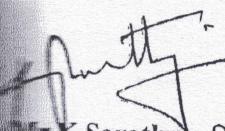
- Literature Survey & Report writing
- Journal Reading
- Simulation Studies

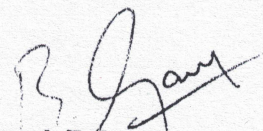
The meeting ended by the Chairman thanking all the members for their presence and overall discussions which she ensured would be incorporated and forwarded to Academic Council.

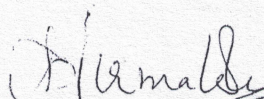
  
(Dr. Sheeja V. Francis)  
CHAIRMAN

  
(Dr. K. Thayalan)  
SUBJECT EXPERT1

  
(Dr. G. Velmathy) 22/7/19  
SUBJECT EXPERT2

  
(Mr. K. Sarathy) 22/7/19  
ALUMNI

  
(Mr. Ganesh Balasubramanian)  
INDUSTRY EXPERT

  
(Dr. S. Nirmala Devi) 22/7/19  
ANNA UNIVERSITY NOMINEE