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Earlier known as
B. V. B. College of Engineering & Technology

Department of Biotechnology

BOS Meeting Details for the Last Five Years



**Recommendations of 1st Board of studies (Biotechnology)
meeting held on 11/07/2015**

Annexure -I

Accepted changes/corrections in the "Overall Curriculum Structure and Credits distribution" for the curriculum draft of B E Biotechnology 2015-19 BATCH

(From III Semester to VIII Semester)

- Members approved the overall distribution of credits in the curriculum structure for 2015 – 19 BE Biotechnology batch.
- Members also appreciated the inclusion of new course at first year ie "Engineering Explorations".
- Members also reviewed and approved the course flow and credit distribution across III to VIII semesters in the proposed curriculum structure.
- Members expressed to incorporate concepts of Bioenterpreuinership Management in any of the management related courses.
- For Bioinformatics theory course the delivery is attached to lab was appreciated by the members.

Date: 11/07/2015

Chairman BOS

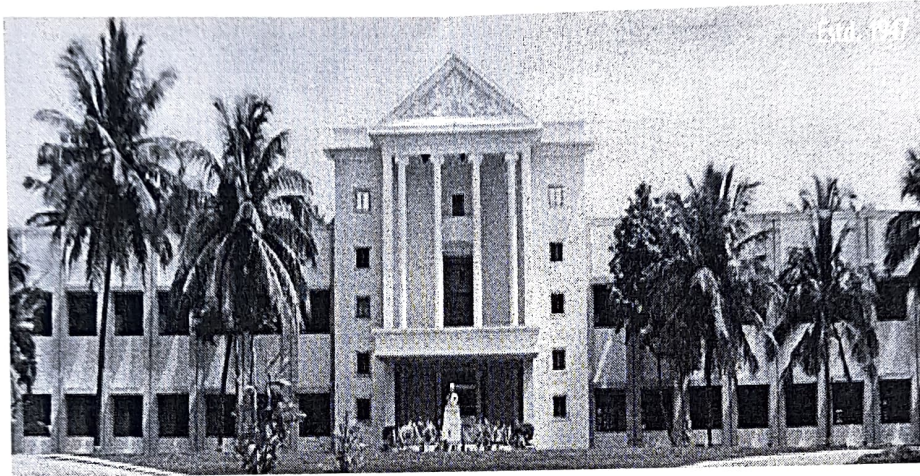
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KLE Technological University
HUBBALLI-580 031**



BACHELOR OF ENGINEERING

BIOTECHNOLOGY



Minutes of 2nd BOS Meeting

Academic Year 2016-17

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DEPARTMENT OF BIOTECHNOLOGY

**2nd Board of Studies (BOS) Meeting of
Biotechnology Engineering (UG) Programme
26th March 2016**

MEETING AGENDA

1. Re-approval of Curriculum structure from III to VIII Semester of 2015-19
2. Approval of detailed content of III and IV semester courses of 2015-19 Batch
3. Approval of Curriculum structure from III to VIII Semester of 2016 - 20 Batch
4. Any other subject related to syllabus.

Meeting Date: 26 - 03 - 2016
Time: 10.00 AM
Venue: H.O.D Chamber,
Biotechnology Department

Chairman

Prof. Laxmikant R Patil
HEAD
DEPT OF BIOTECHNOLOGY
K.L.E. TECHNICAL,
UNIVERSITY, HUBBALLI-31,
Copy to: All the members of BOS

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**Proceedings of the 2nd Board of Studies
(B. E. Biotechnology Programme) Meeting held on 26-03-2016 at
the Department of Biotechnology.**

**Board of Studies met on 26-03-2016 to discuss the following
agenda**

1. Re-approval of Curriculum structure from III to VIII Semester of 2015-19 Batch
2. Approval of detailed content of III and IV semester courses of 2015-19 Batch
3. Approval of Curriculum structure from III to VIII Semester of 2016 - 20 Batch
4. Any other subject related to syllabus.

After the deliberate discussions the following decisions were made

1. Re-approved the suggested Curriculum structure for the academic year 2015 - 19 Batch with some suggestions (*Annexure-I*)
2. Approved the detailed content of III and IV semester courses of 2015-19 Batch with some suggestions (*Annexure-II*)
3. Approved the suggested Curriculum structure for the academic year 2016 - 20 Batch with some suggestions (*Annexure-III*)

Members present at the 2nd B.O.S. Meeting dated 26th March 2016

Sl. No.	Name	Signature
1	Prof. L. R. Patil, Associate Professor and Head. Dept. of Biotechnology, B.V.B. College of Engg. & Tech., Vidyanagar, Hubli – 580 031.	 CHAIRMAN

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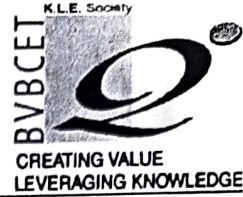
2	Dr. N G Karanth Former Deputy Director and Head, Fermentation Technology Bioengineering department, CFTRI, Mysore INDIA	 MEMBER
4	Dr. K.S. Jagadeesh Professor Dept. of Agril Microbiology UAS. Dharwad -580 005	 MEMBER
5	Dr. Rajyashree K R Co-founder & MD Navya Biologicals, Incubation Centre BVB CET Hubli – 580 031.	 MEMBER
6	Dr. Sudheendra Kulkarni SENIOR MANAGER - QA, Syngene International Limited , Bangalore – 560099	 MEMBER
7	Mr. Anand Hiremath Scientist –I/ Deputy Manager Aurozymes, Aurobindo Pharma, Hyderabad-500 084	 MEMBER
8	Mr. Sai Srikar Kandukuri Senior Scientist, Biocon Research limited, Bangalore- 560 100	 MEMBER
9	Dr. Basavaraj S Hungund Professor, Dept. of Biotechnology, B.V.B. College of Engg. & Tech., Vidyanagar, Hubli – 580 031.	 MEMBER


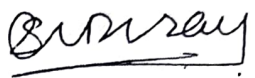

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10	Prof. V S Hombalimath. Associate Professor Dept. of Biotechnology, B.V.B. College of Engg. & Tech., Vidyanagar, Hubli – 580 031	 MEMBER
11	Dr. S. V. Desai Asst Professor, Dept. of Biotechnology, B.V.B. College of Engg. & Tech., Vidyanagar, Hubli – 580 031.	 MEMBER
12	Prof. Zabin K Bagewadi Asst Professor, Dept. of Biotechnology, B.V.B. College of Engg. & Tech., Vidyanagar, Hubli – 580 031.	 MEMBER

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Department of Biotechnology

Recommendations of 2nd Board of studies of KLE Technological University
(Biotechnology) meeting held on 26/03/2016

Annexure-I

Agenda-1: Re-approval of Curriculum structure from III to VIII Semester of 2015-19 Batch.

- No changes were expressed by the BOS members

Annexure-II

Agenda-2: Approval of detailed content of III and IV semester courses of 2015-19 Batch.

The following were the changes suggested by the BOS members

3rd Semester Courses

1. Microbiology:

- Microbial genetics, functional anatomy of prokaryotes
- Bacterial division and generation time
- Restructure microbial metabolism topic

2. Biochemistry:

- Production of microbial polysaccharides, industrial application of exopolysaccharides, medical applications of exopolysaccharides.
- Exploitation of nature for product development and applications, medicinal plants, plant secondary metabolites and endophytes.

3. Heat and mass transfer:

- Adsorption unit operation

4. Microbiology Laboratory:

- Experiment on laboratory safety, SOP and GLP
- Experiment on simple staining technique
- Experiment on study of laboratory equipments like incubators, Freeze drier.

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4th Semester Courses

1. Enzyme technology and Metabolism:

- Oleaginous microbes and their principal lipids, production of microbial lipids, modification of lipids for commercial application. Extracellular microbial lipids and biosurfactants.
- Protein folding and assembly. Protein folding pathways in prokaryotes and eukaryotes. Application of gene cloning in redirecting cellulose metabolism for overproduction of few industrial products. Strategies for hyper production of primary and secondary metabolites such as amino acids, antioxidants and antibiotics.

2. Cell and molecular biology:

- Nucleic acid isolation and characterization.
- PCR chapter should be appropriate in cell and molecular biology course rather than genetic engineering and application.
- Some applications of molecular biology related topics.

3. Cell and Molecular biology laboratory:

- Experiment on SOP of different instruments.
- Mitosis and meiosis experiments to be made as one experiment.

Annexure-III

Agenda-3: Approval of Curriculum structure from III to VIII Semester of 2016 - 20 Batch

- With inputs from the stake-holders (Faculty), it was resolved to introduce the following new electives in the curriculum.
 - 1) Bioprocess Plant Design and Economics (VI Sem)
 - 2) Environmental Biotechnology (VII Sem)

Date: 26-03-2016


Chairman BOS

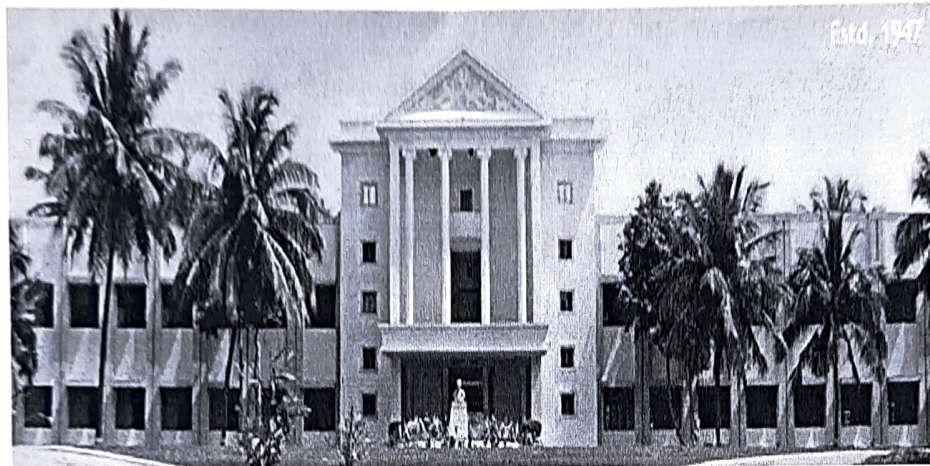



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Minutes of 3rd BOS Meeting

Academic Year 2017-18

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[Signature]
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DEPARTMENT OF BIOTECHNOLOGY

**3rd Board of Studies (BOS) Meeting of
Biotechnology Engineering (UG) Programme
8th April 2017**

MEETING AGENDA

1. Approval of Curriculum structure from III to VIII Semester of 2017-21
2. Re-approval of Curriculum structure from III to VIII Semester of 2016-20
3. Approval of detailed content of III and IV semester courses of 2016-20 Batch
4. Approval of detailed content of V and VI semester courses of 2015-19 Batch
5. Approval of Program Educational Objectives (PEOs)
6. Any other subject related to syllabus.

Meeting Date: 08 - 04 - 2017
Time: 10.00 AM
Venue: H.O.D Chamber,
Biotechnology Department

Chairman

Dr. Uday M. Muddapur
HEAD
DEPT. OF BIOTECHNOLOGY
K.L.E. TECHNOLOGICAL,
UNIVERSITY, HUBBALLI-31
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**Proceedings of the 3rd Board of Studies
(B. E. Biotechnology Programme) Meeting held on 08-04-2017 at
the Department of Biotechnology.**

**Board of Studies met on 08-04-2017 to discuss the following
agenda**

1. Approval of Curriculum structure from III to VIII Semester of 2017-21
2. Re-approval of Curriculum structure from III to VIII Semester of 2016-20
3. Approval of detailed content of III and IV semester courses of 2016-20
Batch
4. Approval of detailed content of V and VI semester courses of 2015-19
Batch
5. Approval of Program Educational Objectives (PEOs)
6. Any other subject related to syllabus.

After the deliberate discussions the following decisions were made

1. Approved the suggested Curriculum structure for the academic year 2017
- 21 Batch with no changes (*Annexure-I*)
2. Re-approved the suggested Curriculum structure for the academic year
2016 - 20 Batch with no changes (*Annexure-II*)
3. Approved the detailed content of III and IV semester courses of 2016-20
Batch with some suggestions (*Annexure-III*)
4. Approved the detailed content of V and VI semester courses of 2015-19
Batch with no changes (*Annexure-IV*)
5. Approved the Program Educational Objectives (PEOs) with no changes

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Members present at the 3rd B.O.S. Meeting dated 08th April 2017

Sl. No.	Name	Signature
1	Dr. Uday M. Muddapur, Professor and Head, Dept. of Biotechnology, K.L.E Technological University, Vidyanagar, Hubli – 580 031.	 CHAIRMAN

2	Dr. N G Karanth Former Deputy Director and Head, Fermentation Technology Bioengineering department, CFTRI, Mysore INDIA	 MEMBER
3	Dr. K.S. Jagadeesh Professor Dept. of Agril Microbiology UAS. Dharwad -580 005	 MEMBER
4	Dr. Rajyashree K R Co-founder & MD Navya Biologicals, Incubation Centre BVB CET Hubli – 580 031.	Absent MEMBER
5	Dr. Sudheendra Kulkarni SENIOR MANAGER - QA, Syngene International Limited , Bangalore – 560099	 MEMBER
6	Mr. Anand Hiremath Scientist -I/ Deputy Manager Aurozymes, Aurobindo Pharma, Hyderabad-500 084	Absent MEMBER
7	Mr. Sai Srikar Kandukuri Senior Scientist, Biocon Research limited, Bangalore- 560 100	 MEMBER

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8	Dr. Basavaraj S Hungund Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
9	Prof. L. R. Patil Associate Professor Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
10	Prof. V S Hombalimath. Associate Professor Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
11	Dr. S. V. Desai Assistant Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
12	Prof. Anil R. Shet Assistant Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
13	Prof. Gururaj Tennalli Assistant Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER

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Department of Biotechnology

Recommendations of 3rd Board of studies of KLE Technological University
(Biotechnology) meeting held on 08/04/2017

Annexure-I

Agenda-1: Approval of Curriculum structure from III to VIII Semester of 2017-21 Batch.

- No changes were expressed by the BOS members

Annexure-II

Agenda-2: Approval of Curriculum structure from III to VIII Semester of 2016-20 Batch.

- No changes were expressed by the BOS members

Annexure-III

Agenda-3: Approval of detailed content of III and IV semester courses of 2016-20 Batch.
The following were the changes suggested by the BOS members

3rd Semester Courses

1. Biochemistry:

- Concepts of Metabolism of Amino acids, fatty acids and Nucleic acids to be shifted from enzyme technology to Biochemistry.
- The role of Membrane receptors ex: insulin binding in metabolism (carbohydrate) to be included.
- Transmembrane proteins signal transduction, G-proteins, tyrosine kinase receptor as example to be included.

2. Unit Operations-I:

- Concept of Crystallization, its Principle and Applications to be included.
- Extraction Processes like Aqueous two phase Extraction and Super critical Fluid extraction to be included in Extraction chapter.

4th Semester Courses

2. Enzyme Technology:

- Concept of Proximity and orientation effects and Mechanism of coenzymes to be included in chapter 1.
- Line Weaver Burk plot, Eadie Hofstee plot, Hanes Woolf plot to be included in Enzyme Kinetics and Enzyme Inhibitions chapter.
- Chapter on enzymes of medical importance which involves importance of enzymes in diagnostics and Enzyme pattern in diseases to be included.
- Design of different Immobilized Enzyme Reactors to be included in Enzyme Immobilization chapter

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- Concept of Designer enzymes, Elements of biosensors, Design of enzyme electrodes to be included in the chapter on Enzyme transformation and Enzyme Biosensors
- Chronology of chapters to be changed: chapter 2, 3, 4 and 6 should become chapter 4, 2, 3 and 5 respectively.

3. Cell and Molecular Biology:

- Chapter on Analysis of Gene Expression to be included which involves Analyzing Transcription, Transcriptome Analysis, Promoter activity study and Translational Analysis
- Primer design to be included

4. Unit Operations-II:

- Concept of Fluidized beds, types of fluidization and Fluidized bed bioreactor to be included in chapter 3.
- Modern instruments related to fluid pressure measurement, flow meters, pumps and valves to be included.

Annexure-IV

Agenda-4: Approval of detailed content of V and VI semester courses of 2015-19 Batch.
The following were the changes suggested by the BOS members

5th semester Courses

1. Genetic engineering and applications:

- Directed Mutagenesis with M13 DNA, Plasmid DNA, PCR Amplification and Protein Engineering for adding disulphide bonds, increasing enzymatic activity to be included.

2. Reaction Engineering:

- Chapters on Heterogeneous reactor system and reactor engineering which involves different performance equation and bioreactor configurations to be included in this course.

3. Biological Thermodynamics:

- Concept of Oxidation-Reduction reaction, Cell Membrane Transportation & Protein Extraction and Nernst equation in membrane transportation to be included in chapter 4.
- Chapter on Statistical Thermodynamics to be included.

6th semester Courses

1. Bioprocess Engineering:

- Chapter on scale up of bioreactor and solid state fermentation to be included.

Agenda-5: Approval of Program Educational Objectives

- BOS members approved the Program Educational Objectives (PEO)

Date: 08-04-2017

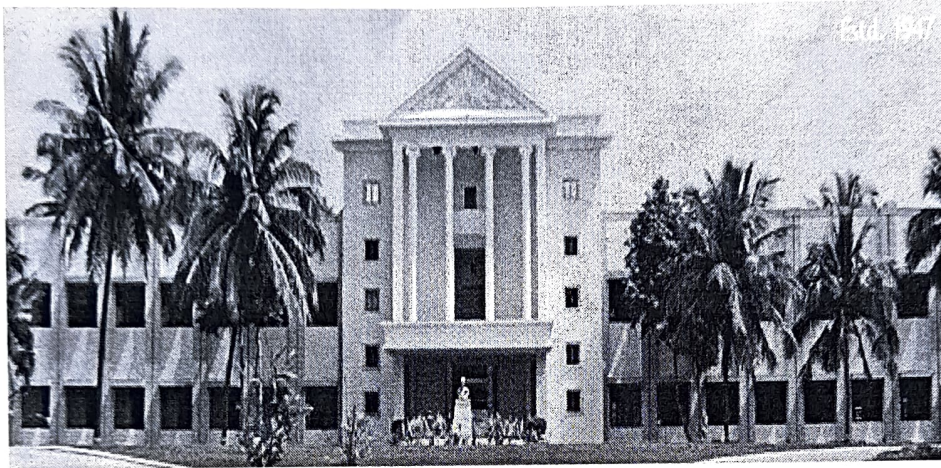

Chairman BOS




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BACHELOR OF ENGINEERING
BIOTECHNOLOGY



Minutes of 4th BOS Meeting

Academic Year 2018-19

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DEPARTMENT OF BIOTECHNOLOGY

**4th Board of Studies (BOS) Meeting of
Biotechnology Engineering (UG) Programme
7th April 2018**

MEETING AGENDA

1. Approval of Curriculum structure from III to VIII Semester of 2018-22 Batch
2. Approval of detailed content of III and IV semester courses of 2017-21 Batch
3. Approval of detailed content of V and VI semester courses of 2016-20 Batch
4. Approval of detailed content of VII and VIII semester courses of 2015-19 Batch
5. Any other subject related to syllabus.

Meeting Date: 07 - 04 - 2018

Time: 10.00 AM

Venue: H.O.D Chamber,
Biotechnology Department

Chairman

Dr. Uday M. Muddapur

HEAD

**DEPT. OF BIOTECHNOLOGY
K. L. E. TECHNOLOGICAL
UNIVERSITY, HUBBALLI-580 031**

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**Proceedings of the 4th Board of Studies
(B. E. Biotechnology Programme) Meeting held on 07-04-2018 at
the Department of Biotechnology.**

**Board of Studies met on 07-04-2018 to discuss the following
agenda**

1. Approval of Curriculum structure from III to VIII Semester of 2018-22
Batch
2. Approval of detailed content of III and IV semester courses of 2017-21
Batch
3. Approval of detailed content of V and VI semester courses of 2016-20
Batch
4. Approval of detailed content of VII and VIII semester courses of 2015-19
Batch
5. Any other subject related to syllabus.

After the deliberate discussions the following decisions were made

1. Approved the suggested Curriculum structure from III to VIII semester of
2018 - 22 Batch with no changes (*Annexure-I*)
2. Approved the detailed content of III and IV semester courses of 2017-21
Batch with some suggestions (*Annexure-II*)
3. Approved the detailed content of V and VI semester courses of 2016-20
Batch with some suggestions (*Annexure-III*)
4. Approved the detailed content of VII and VIII semester courses of 2015-
19 Batch with some suggestions (*Annexure-IV*)

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HUBBALLI-580 031



Members present at the 4th B.O.S. Meeting dated 07th April 2018

Sl. No.	Name	Signature
1	Dr. Uday M. Muddapur, Professor and Head. Dept. of Biotechnology, K.L.E Technological University, Vidyanagar, Hubli - 580 031.	 CHAIRMAN
2	Dr. Vijaysai P. Consulting Engineer SUEZ Water Technologies and Solutions Whitefield, Bangalore-560066	 MEMBER
3	Dr. K.S. Jagadeesh Professor Dept. of Agril Microbiology UAS. Dharwad -580 005	 MEMBER
4	Dr. Rajyashree K R Co-founder & MD Navya Biologicals, Incubation Centre BVB CET Hubli - 580 031.	 MEMBER
5	Dr. Ravindra Gudihal Marketing Manager, Advanced Analytical Research and Applied Solutions Merck Life Science Pvt Ltd Bangalore-560100	 MEMBER
6	Mr. Anand Hiremath Scientist -II/ Deputy Manager Aurozymes, Aurobindo Pharma, Hyderabad-500 084	 MEMBER

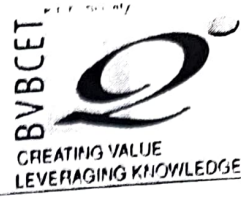
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7	Mr. Sai Srikar Kandukuri Senior Scientist, Biocon Research limited, Bangalore- 560 100	<i>Kandukuri's</i> MEMBER
8	Mr. Dinesh C. Goudar Statistical Expert Novartis Healthcare Pvt Ltd Hyderabad-500049	<i>Dinesh</i> MEMBER
9	Dr. Basavaraj S Hungund Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	<i>Bhungund</i> MEMBER
10	Prof. L. R. Patil Associate Professor Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	<i>Patil</i> MEMBER
11	Dr. S. V. Desai Associate Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	<i>Desai</i> MEMBER
12	Prof. Anil R. Shet Assistant Professor, Dept. of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	<i>Anil Shet</i> MEMBER
13	Miss Manisha K. Byakodi Student Department of Biotechnology K.L.E. Technological University, Vidyanagar, Hubli-580031	<i>Manisha</i> MEMBER

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Department of Biotechnology

Recommendations of 4th Board of studies of KLE Technological University
(Biotechnology) meeting held on 07/04/2018

Annexure-I

Agenda-1: Approval of Curriculum structure from III to VIII Semester of 2018-22 Batch.

- No changes were expressed by the BOS members

Annexure-II

Agenda-2: Approval of detailed content of III and IV semester courses of 2017-21 Batch

1. Biochemistry Lab:

The BOS members suggested to include "Analytical method development according to International Council for Harmonization (ICH) guidelines" in Biochemistry lab (III Semester).

Annexure-III

Agenda-3: Approval of detailed content of V and VI semester courses of 2016-20 Batch.

1. Biological Data Analysis: This new program elective has been introduced in 6th Semester. The course was accepted by the BOS members with some changes. The content of the 1st chapter has to be correlated with Design of experiments.

2. Mini and Minor Project:

The BOS members recommended to change the approach of implementing the mini project and minor project in V and VI semester respectively.

Annexure-IV

Agenda-4: Approval of detailed content of VII and VIII semester courses of 2015-19 Batch.
The following were the changes suggested by the BOS members

1. Downstream Process Technology Lab:

The BOS members suggested that the experiments in DSPT Lab. have to be designed with respect to a single product purification, which has to undergo all the operations.

2. Biopharmaceuticals:

As per the suggestions of BOS members, the course content has to be modified to include Active pharmaceutical Ingredient (API) and Formulation concepts. A new chapter on Pharmacology and Pharmacodynamics has to be included. Biopharma industry regulations in line with ICH guidelines have to be included.

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3. Bioprocess Modeling and Simulation

This new program elective has been introduced in 7th semester. The course was accepted by the BOS members with some changes. Unit II and Unit III of this course has to be swapped.

8th Semester Courses

1. Quality Assurance and Regulations: This new program elective has been introduced in 8th Semester. The course was accepted by the BOS members with some changes. The titles of chapter 3 and 4 have to be changed to "Process validation" and "Analytical method validation" respectively. The content of the course needs to be modified to justify teaching hours.

Date: 07-04-2018

Chairman BOS

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BACHELOR OF ENGINEERING

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Minutes of 5th BOS Meeting

Academic Year 2019-20

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DEPARTMENT OF BIOTECHNOLOGY

**5th Board of Studies (BOS) Meeting of
Biotechnology Engineering (UG) Programme
13th April 2019**

MEETING AGENDA

1. Approval of Curriculum structure from III to VIII Semester of 2019-23 Batch
2. Approval of detailed content of III and IV semester courses of 2018-22 Batch
3. Approval of detailed content of V and VI semester courses of 2017-21 Batch
4. Approval of detailed content of VII and VIII semester courses of 2016-20 Batch
5. Any other subject related to syllabus.

Meeting Date: 13 - 04 - 2019

Time: 10.00 AM

Venue: H.O.D Chamber,
Biotechnology Department

Chairman

Dr. Uday M. Muddapur

HOD

HEAD

DEPT. OF BIOTECHNOLOGY

KLE TECHNOLOGICAL
UNIVERSITY, HUBBALLI-31.

Copy to: All the members of BOS

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DEPARTMENT OF BIOTECHNOLOGY

**Proceedings of the 5th Board of Studies
(B. E. Biotechnology Programme) Meeting held on 13-04-2019 at
the Department of Biotechnology.**

**Board of Studies met on 13-04-2019 to discuss the following
agenda**

1. Approval of Curriculum structure from III to VIII Semester of 2019-23
Batch
2. Approval of detailed content of III and IV semester courses of 2018-22
Batch
3. Approval of detailed content of V and VI semester courses of 2017-21
Batch
4. Approval of detailed content of VII and VIII semester courses of 2016-20
Batch
5. Any other subject related to syllabus.

After the deliberate discussions the following decisions were made

1. Approved the suggested Curriculum structure from III to VIII semester of
2019 - 23 Batch with no changes (*Annexure-I*)
2. Approved the detailed content of III and IV semester courses of 2018-22
Batch with some suggestions (*Annexure-II*)
3. Approved the detailed content of V and VI semester courses of 2017-21
Batch with some suggestions (*Annexure-III*)
4. Approved the detailed content of VII and VIII semester courses of 2016-
20 Batch with some suggestions (*Annexure-IV*)

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KLE Technological University
HUBBALLI-580 031



DEPARTMENT OF BIOTECHNOLOGY

Members present at the 5th B.O.S. Meeting dated 13th April 2019

Sl. No.	Name	Signature
1	Dr. Uday M. Muddapur, Professor and Head. Department of Biotechnology, K.L.E Technological University, Vidyanagar, Hubli – 580 031.	 CHAIRMAN
2	Dr. Vijaysai P. Consulting Engineer SUEZ Water Technologies and Solutions Whitefield, Bangalore-560066	 MEMBER
3	Dr. K.S. Jagadeesh Professor (Agril. Microbiology) Dept of Forest Biology College of Forestry Sirsi-581 401	<i>Absent</i> MEMBER
4	Dr. Rajyashree K. R. Chief Scientific officer Shilpa Medicare Pvt Ltd Incubation Centre K.L.E Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
5	Dr. Sudeep Kumar Head-R&D, QC, QA and Manufacturing of recombinant therapeutic proteins, Unichem Laboratories Ltd, Goa-403511	<i>Absent</i> MEMBER
6	Mr. Anand Hiremath Scientist –I/ Deputy Manager Aurozymes, Aurobindo Pharma, Hyderabad-500 084	 MEMBER 13/04/2019

Beengard

REGISTRAR
KLE Technological University
HUBBALLI-580 031



DEPARTMENT OF BIOTECHNOLOGY

7	Mr. Sai Srikar Kandukuri Deputy Manager, Biocon limited, Bangalore- 560 100	 MEMBER
8	Mr. Dinesh C. Goudar Manager, Manufacturing Science, Mylan Pharmaceuticals private limited Bangalore-560 087	 MEMBER
9	Dr. Basavaraj S. Hungund Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
10	Dr. L. R. Patil Associate Professor Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
11	Dr. S. V. Desai Associate Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
12	Prof. Anil R. Shet Assistant Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
13	Miss Haripriya Student Department of Biotechnology K.L.E. Technological University, Vidyanagar, Hubli-580031	 MEMBER

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Department of Biotechnology

Recommendations of 5th Board of studies of KLE Technological University (Biotechnology) meeting held on 13/04/2019

Annexure-I

Agenda-1: Approval of Curriculum structure from III to VIII Semester of 2019-23 Batch.

- No changes were expressed by the BOS members

Annexure-II

Agenda-2: Approval of detailed content of III and IV semester courses of 2018-22 Batch

1. Microbiology:

The BOS members suggested to include "Microbes and human society, Microbial applications in agriculture, veterinary, healthcare, industry and environment" in microbiology course.

2. Microbiology Laboratory:

One new open ended experiment has been proposed in Microbiology laboratory. It was accepted by the BOS members with no changes.

3. Cell and Molecular Biology Laboratory:

One exercise experiment has been converted to open ended experiment. It was accepted by the BOS members with no changes.

Annexure-III

Agenda-3: Approval of detailed content of V and VI semester courses of 2017-21 Batch.

1. Genetic Engineering and applications:

The BOS members suggested to include "Ethical, Social, Economical and Political issues related to Gene modification and Genetic Engineering" in genetic engineering and applications course.

2. Genetic Engineering & Immunotechnology Laboratory:

Two exercise experiments are converted to structured enquiry experiments. It was accepted by the BOS members with no changes.

3. Research Methodology:

As per the suggestions of BOS members, the course content should include "author h-index and i10-index, awareness on predatory journals and its identification, grants and funding agencies for biotechnology research, Design of matrix and analysis, Contour plots and response surface plots, Introduction to Artificial Intelligence and its application in biotechnology". The members also suggested to swap chapter 5 and 6 for proper flow of the course.

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4. Bioinformatics: With inputs from BOS members the course content of Bioinformatics course has been modified to include recent developments in Computational Biology. Subsequently credit weight age has been changed from 3 credits to 4 credits.

5. Bioprocess Control and automation:

The BOS members suggested including one chapter on multiple input and multiple output systems (MIMO systems) in Bioprocess control and automation course.

6. As per the inputs from the stake-holders (Alumni Feedback), new elective Bioprocess Modelling and Simulation was introduced at VI Semester.

Annexure-IV

Agenda-4: Approval of detailed content of VII and VIII semester courses of 2016-20 Batch.
The following were the changes suggested by the BOS members

1. Plant and Animal Biotechnology:

The BOS members suggested to include "Ethical and Social issues related to development and release of transgenic plants with case studies – Bt Cotton" in plant and animal Biotechnology elective course.

8th Semester Courses

1. Industrial Waste Management: This new open elective has been proposed in 8th Semester to address civil and mechanical engineering students. This course was accepted by the BOS members with no changes.

Date: 13-04-2019

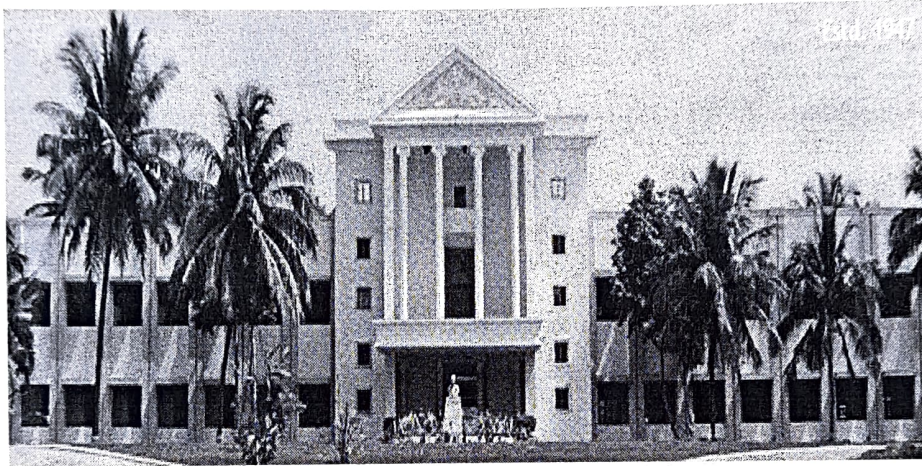
Chairman BOS

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BACHELOR OF ENGINEERING

BIOTECHNOLOGY



Minutes of 6th BOS Meeting

Academic Year 2020-21

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DEPARTMENT OF BIOTECHNOLOGY

**6th Board of Studies (BOS) Meeting of
Biotechnology (UG) Program
19th June 2020**

MEETING AGENDA

1. Approval of Curriculum structure from III to VIII Semester of 2020-24 Batch
2. Approval of curriculum structure of VII and VIII semester and detailed content of III and IV semester courses of 2019-23 Batch
3. Approval of curriculum structure of VII and VIII semester and detailed content of V and VI semester courses of 2018-22 Batch
4. Approval of curriculum structure of VII and VIII semester and detailed content of VII and VIII semester courses of 2017-21 Batch
5. Approval of 7th semester project work for 2017-21 Batch
6. Conduct of Online exams for all the courses of 4th, 6th and 8th Semester
7. Any other subject related to syllabus

Meeting Date: 19 - 06 - 2020
Time: 6.00 PM (online through MS Teams)
Venue: H.O.D Chamber,
Biotechnology Department

Chairman

**Dr. B. S. Hungund
HOD**

Copy to: All the members of BOS

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DEPARTMENT OF BIOTECHNOLOGY

**Proceedings of the 6th Board of Studies
(B. E. Biotechnology Program) Meeting held online through (MS
Teams) on 19-06-2020 at the Department of Biotechnology**

**Board of Studies met online on 19-06-2020 to discuss the following
agenda**

1. Approval of Curriculum structure from III to VIII Semester of 2020-24 Batch
2. Approval of curriculum structure of VII and VIII semester and detailed content of III and IV semester courses of 2019-23 Batch
3. Approval of curriculum structure of VII and VIII semester and detailed content of V and VI semester courses of 2018-22 Batch
4. Approval of curriculum structure of VII and VIII semester and detailed content of VII and VIII semester courses of 2017-21 Batch
5. Approval of 7th semester project work for 2017-21 Batch
6. Conduct of Online exams for all the courses of 4th, 6th and 8th Semester
7. Any other subject related to syllabus

After the deliberate discussions the following decisions were made

1. Approved the curriculum structure from III to VIII Semester of 2020-24 Batch with no changes (*Annexure-I*)
2. Approved the curriculum structure of VII and VIII semester and detailed content of III and IV semester courses of 2019-23 Batch with no changes (*Annexure-II*)
3. Approved the curriculum structure of VII and VIII semester and detailed content of V and VI semester courses of 2018-22 Batch with no changes (*Annexure-III*)

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DEPARTMENT OF BIOTECHNOLOGY

4. Approved the curriculum structure of VII and VIII semester and detailed content of VII and VIII semester courses of 2017-21 Batch with some suggestions (*Annexure-IV*)
5. Approved the 7th semester project work for 2017-21 Batch with no changes (*Annexure-V*)



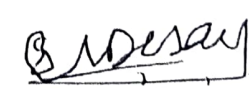

Members present at the 6th B.O.S. Meeting dated 19th June 2020

Sl. No.	Name	Signature
1	Dr. Basavaraj S. Hungund, Professor and Head. Department of Biotechnology, K.L.E Technological University, Vidyanagar, Hubli – 580 031.	 CHAIRMAN
2	Dr. Rajyashree K. R. Chief Scientific officer Shilpa Medicare Pvt Ltd Incubation Centre K.L.E Technological University, Vidyanagar, Hubli – 580 031.	MEMBER
3	Dr. K.S. Jagadeesh Professor (Agril. Microbiology) Dept of Forest Biology College of Forestry Sirsi-581 401	MEMBER
4	Dr. Sudeep Kumar Senior Vice president, Biological-E, Hyderabad	MEMBER





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5	Dr. Vijaysai P. Consulting Engineer SUEZ Water Technologies and Solutions Whitefield, Bangalore-560066	MEMBER
6	Mr. Sai Srikar Kandukuri Deputy Manager, Biocon limited, Bangalore- 560 100	MEMBER
7	Mr. Dinesh C. Goudar Manager, Manufacturing Science, Mylan Pharmaceuticals private limited Bangalore-560 087	MEMBER
8	Mr. Anand Hiremath Manager, Biologicals R&D, Anthem Biosciences Pvt Ltd Bangalore	MEMBER
9	Dr. Uday M. Muddapur Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
10	Dr. L. R. Patil Associate Professor Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
11	Dr. S. V. Desai Associate Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER
12	Prof. Anil R. Shet Assistant Professor, Department of Biotechnology, K.L.E. Technological University, Vidyanagar, Hubli – 580 031.	 MEMBER

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DEPARTMENT OF BIOTECHNOLOGY

13	Mr. Mayur Kanthi Student, VIII Semester Department of Biotechnology K.L.E. Technological University, Vidyanagar, Hubli-580031	 MEMBER
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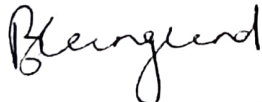
* Note: The 6th BOS meeting was held online through MS Teams on 19/06/2020 from HOD's chamber, Department of Biotechnology, KLE Technological University, Hubballi.

The following external BOS Members and student representative were present for the BOS meeting.

1. Dr. Rajyashree K. R.
2. Dr. K.S. Jagadeesh
3. Dr. Sudeep Kumar
4. Mr. Sai Srikar Kandukuri
5. Mr. Dinesh C. Goudar
6. Mr. Anand Hiremath
7. Mr. Mayur Kanthi (student representative)



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Dr. B. S. Hungund

Chairman
BOS





Department of Biotechnology

Recommendations of 6th Board of studies meeting of Biotechnology Department, KLE Technological University held on 19/06/2020

Annexure-I

Agenda-1: Approval of Curriculum structure from III to VIII Semester of 2020-24 Batch

1. Curriculum structure from III to VIII Semester of 2020-24 Batch was approved by BOS members with no changes

Annexure-II

Agenda-2: Approval of curriculum structure of VII and VIII semester and detailed content of III and IV semester courses of 2019-23 Batch

1. Curriculum structure of VII and VIII semester of 2019-23 was approved with no changes
2. The course content of Numerical Methods and Integral Transforms was modified and renamed as Numerical Methods and Differential Equations looking into its applications in the field of biotechnology and Faculty input. The details of Course content modifications are as follows:
 - In the Matrices and System of linear equations, the present content is sufficient (No modification required).
 - Fourier series and Fourier Transform chapter is removed as it does not find any applications in the field of Biotechnology. In place of this "Introduction to Statistics" is introduced, which is 1st chapter in Biostatistics Course of IV Sem.
 - The course title is changed to Numerical Methods and Differential equations(20EMAB205)
3. The course content of Biostatistics was modified to introduce additional Chapter on "Design of Experiments -2", which includes Fractional factorial design, Placket-Burman design, Response Surface Methodology-Central Composite Design with Analysis of Variance (ANOVA).

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Annexure-III

Agenda-3: Approval of curriculum structure of VII and VIII semester and detailed content of V and VI semester courses of 2018-22 Batch

1. Curriculum structure of VII and VIII semester of 2018-22 batch was approved with no changes
2. Detailed content of V and VI semester courses of 2018-22 batch was approved with no changes

Annexure-IV

Agenda-4: Approval of curriculum structure of VII and VIII semester and detailed content of VII and VIII semester courses of 2017-21 Batch

1. Curriculum structure of VII and VIII semester of 2017-21 was approved with no changes

The following were the changes suggested/approved by the BOS members

2. Downstream Processing Technology:

Credits of Downstream Processing Technology course have been increased from 03 to 04 credits so as to incorporate the relevant content (Inputs from Faculty and BOS members). The content changes include "costing of product" in chapter 01, "heat and photosensitive materials, types of filter media" in chapter 02 and "Reversed micellar extraction" in chapter 04.

3. Bioethics, Safety & IPR:

A new elective course, Bioethics, Safety and IPR was introduced as per the stake-holders (Employer) inputs.

4. Industrial Biotechnology:

A new elective course, Bioethics, Safety and IPR was introduced as per the stake-holders (Faculty) inputs.


5. Project work at VII Semester was introduced to cater project based learning.

6. Bio-Business & Entrepreneurship:

This is a new program elective introduced at VIII semester to provide an insight into Business and Entrepreneurship opportunities in Biotechnology. The course content was approved by the BOS members with some modifications.

Date: 19-06-2020


Chairman BOS


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