



**School of Engineering
Department Of Bio-Engineering
B.Tech Biotechnology**

MINUTES OF THE MEETING FOR BOARD OF STUDIES

Date: 17th May, 2017

Time: 3.30 P.M

Venue: Conference Hall, School of Engineering

The meeting of the Board of Studies of the Department of Bio-Engineering, School of Engineering, Vels University was held at 3.30 P.M on 17.05.2017(Wednesday) in the conference hall of the School of Engineering to consider the curriculum for B.Tech Biotechnology.

The following persons were invited to attend the meeting:

S.No.	Name & Address	Designation
1.	Dr.P.Brindha Devi Assistant Professor and Head, Department of Bio-Engineering, School of Engineering, Vels University, Chennai-117	Chairperson
2.	Dr.D.Yuvaraj Professor and Head, Department of Biotechnology, Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Vel Tech Road, Vel Nagar, Chennai-062	Expert Member
3.	Dr.Arumugam Managing Director, Artmats Biotek Pvt.Ltd, Maduvinkarai, Guindy, Chennai-032	Expert Member

	Mr.Ivo Romauld Assistant Professor, Department of Bio-Engineering, School of Engineering, Vels University, Chennai-117	Internal Member
5.	Mrs.R.J.Hemalatha Assistant Professor and Head, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	Internal Member

All the above listed except one under Sl. No.3 attended the meeting and deliberated on the curriculum in detail.

The following are the recommendations of the Committee on the subject matter.

B.Tech Biotechnology

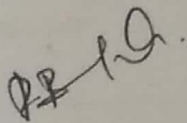
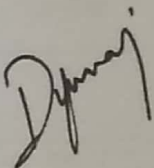
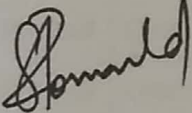
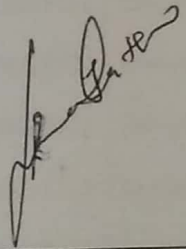
The following changes to be made in the curriculum,

1. In fourth Semester the Core course "Inplant Training was replaced as "Basic Life Skills" for all Engineering Courses to provide value education to improve the students' character
2. In fifth Semester the core course "Inplant Training" was replaced as "Bio-techniques and Bioinstrumentation" as suggested by the team members in the application of Instrumentation.
3. The following subjects have to be introduced in Discipline Specific Elective Courses as suggested by the panel members and as per guidelines of UGC we have also included NPTEL courses. The Subjects are,
 - Principles of Chemical Engineering
 - Bioenergy
 - Tissue Engineering
 - Marine Biotechnology
4. The following subjects have to be introduced in Generic Elective Courses. The subjects are,
 - Total Quality Management
 - Principles of Food Processing

B.E Biomedical Engineering

In fourth Semester the Core course "Inplant Training was replaced as "Basic Life Skills" as a common subject for all Engineering Courses to provide value education to improve the students' character

All the above change, modification and revision in the curriculum and syllabus were carried out in order to meet the advancement in the field of Biotechnology

S.No.	Name & Address	Signature
1.	Dr.P.Brindha Devi Assistant Professor and Head, Department of Bio-Engineering, School of Engineering, Vels University, Chennai-117	
2.	Dr.D.Yuvaraj Professor and Head, Department of Biotechnology, Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Vel Tech Road, Vel Nagar, Chennai-062	
3.	Dr.Arumugam Managing Director, Artmats Biotek Pvt.Ltd, Maduvinkarai, Guindy, Chennai-032	A
4.	Mr.Ivo Romauld Assistant Professor, Department of Bio-Engineering, School of Engineering, Vels University, Chennai-117	
5.	Mrs.R.J.Hemalatha Assistant Professor and Head, Department of Biomedical Engineering, School of Engineering, Vels University, Chennai-117	

The following changes are made in the curriculum after Board of studies meeting.

S.No.	Actual Curriculum		Proposed Curriculum	
	IV Semester		IV Semester	
	15EBT014	Implant Training I	15BESY41	Basic Life Skills
	V Semester		V Semester	
	15EBT020	Implant Training II	15EBT020	Biotechniques and Bioinstrumentation
	Discipline Elective Courses		Discipline Elective Courses	
	Code No.	Course	Code No.	Course
	15EBT101	Bio Organic chemistry	15EBT101	Bio Organic chemistry
	15EBT102	Applied Thermodynamics for Biotechnologists	15EBT102	Applied Thermodynamics for Biotechnologists
	15EBT103	Unit Operations	15EBT103	Unit Operations
	15EBT104	Stoichiometric Fluid Mechanics	15EBT104	Stoichiometric Fluid Mechanics
	15EBT105	Heat transfer Operations	15EBT105	Heat transfer Operations
	15EBT106	Mass transfer Operations	15EBT106	Mass transfer Operations
	15EBT107	Downstream processing	15EBT107	Downstream processing
	15EBT108	Creativity, innovation and new product development	15EBT108	Creativity, innovation and new product development
	15EBT109	Chemical Reaction Engineering	15EBT109	Chemical Reaction Engineering
	15EBT110	Fermentation Technology	15EBT110	Fermentation Technology
	15EBT111	Bioorganic Chemistry Laboratory	15EBT111	Bioorganic Chemistry Laboratory
	15EBT112	Downstream Processing Laboratory	15EBT112	Downstream Processing Laboratory
			15EBT113	Principles of Chemical Engineering
			15EBT114	Bio-Energy
			15EBT115	Tissue Engineering
			15EBT116	Marine Biotechnology
	Generic Elective Courses		Generic Elective Courses	

Code No.	Course	Code No.	Course
15EBT151	Bioethics and Biosafety	15EBT151	Bioethics and Biosafety
15EBT152	Biotechnology Explorations- Applying the Fundamentals	15EBT152	Biotechnology Explorations- Applying the Fundamentals
15EBT153	Proteins and Enzymes	15EBT153	Proteins and Enzymes
15EBT154	Toxicology	15EBT154	Toxicology
15EBT155	Entrepreneurship Development	15EBT155	Entrepreneurship Development
15EBT156	Biotechnology and human welfare	15EBT156	Biotechnology and human welfare
15EBT157	Developmental Biology	15EBT157	Developmental Biology
15EBT158	Instrumentation and biotechniques	15EBT158	Instrumentation and bio techniques
15EBT159	Industrial and Food Microbiology	15EBT159	Industrial and Food Microbiology
15EBT160	Basics of Forensic science	15EBT160	Basics of Forensic science
15EBT161	Biotechnology in Health Care	15EBT161	Biotechnology in Health Care
		15EBT162	Total Quality Management
		15EBT163	Principles of Food Processing

OBJECTIVE:

Providing value education to improve the students' character - understanding of principled life and physical health - maintaining youthfulness - measures and methods in five aspects of life

6

UNIT I: PHYSICAL HEALTH

1. Manavalakalai (SKY) Yoga: Introduction - Education as a means for youth empowerment - Greatness of Education - Yoga for youth Empowerment.
2. Simplified Physical Exercises: Hand, Leg, Breathing, Eye exercises - Kapalabathi, Makarasana Part I, Makarasana Part II, Body Massage, Acu pressure, Relaxation exercises - Benefits.
3. Yogasanas: Pranamasana - Hastha Uttanasana - Pada Hasthasana - AswaSanjalana Asana - Thuvipatha asva Sanjalana asana - Astanga Namaskara - Bhujangasana - Atha Muktha Savasana - Aswa Sanjalana Asana - Pada Hasthasana - Hastha Uttanasana - Pranamasana.
4. Pranayama : Naddi suddi - Clearance Practice - Benefits.

6

UNIT II: LIFE FORCE

1. Reasons for Diseases - Natural reasons (Genetic / imprints, Planetary Position, Natural calamities and climatic changes) - Unnatural reasons (Food habits, Thoughts, Deeds)
2. Philosophy of Kaya kalpa - Physical body - Sexual vital fluid - Life force -Bio-Magnetism - Mind.
3. Maintaining youthfulness : Postponing old age - Transformation of food into seven components - Importance of sexual vital fluid -
4. Measure and method in five aspects of life - Controlling undue Passion.
5. Kayakalpa practice - Aswini Mudra - Ojas breath - Benefits of Kaya Kalpa.

6

UNIT III: MENTAL HEALTH

- 1) Mental Frequencies - Beta, Apha, Theta and Delta wave - Agna Meditation explanation - benefits.
- 2) Shanthi Meditation explanation - Benefits
- 3) Thuriya Meditation explanation - Benefits
- 4) Benefits of Blessing - Self blessing (Auto suggestion) - Family blessing - Blessing the others - World blessing - Divine protection

6

UNIT IV: VALUES

- Human Values:
 - 1) Self control - Self confidence - Honesty
 - 2) Contentment - Humility - Modesty
 - 3) Tolerance - Adjustment - Sacrifice - Forgiveness
 - 4) Purity (Body, Dress, Environment) - Physical purity - Mental purity - Spiritual purity
- Social Values:
 - 1) Non violence - Service
 - 2) Patriotism - Equality
 - 3) Respect for parents and elders - care and protection - Respect for teacher
 - 4) Punctuality - Time Management

UNIT V: MORALITY (VIRTUES)

6

- 1) Importance of Introspection - I - Mine (Ego, Possessiveness).
- 2) Six Evil Temperaments - Greed - Anger - Miserliness - Immoral sexual passion - Inferiority and superiority Complex - Vengeance.

- 3) Maneuvering of Six Temperaments - Contentment - Tolerance - Charity - Chastity - Equality - Pardon (Forgiveness).
- 4) Five essential Qualities acquired through Meditation: Perspicacity - Magnanimity - Receptivity - Adaptability – Creativity.
- 5) Improved Memory Power - Success in the Examination.

Total: 30 hrs.

REFERENCE BOOKS:

1. Vethathiri Maharishi, 16th Edi.2013, Yoga for Modern Age, Vethathiri Publications, Erode.
2. Vethathiri Maharishi, 2014, Simplified Physical Exercises, Vethathiri Publications, Erode.
3. Vethathiri Maharishi, 3rd Edi.2014, Kayakalpam, Vethathiri Publications, Erode.
4. Rev.Dr.G.U.pope, 2016, Thirukkural, Giri Trading Agency,
5. Vethathiri Maharishi, 1994, Mind, Vethathiri Publications, Erode.
6. Chandrasekaran.K, 1999, Sound Health through yoga, Sedapati, Tamilnadu, Premkalyan Publications.
- Iyengar, B.K.S. 2008, Light on Yoga, Noida, UP India, Harber Collins Publishing India Ltd.,