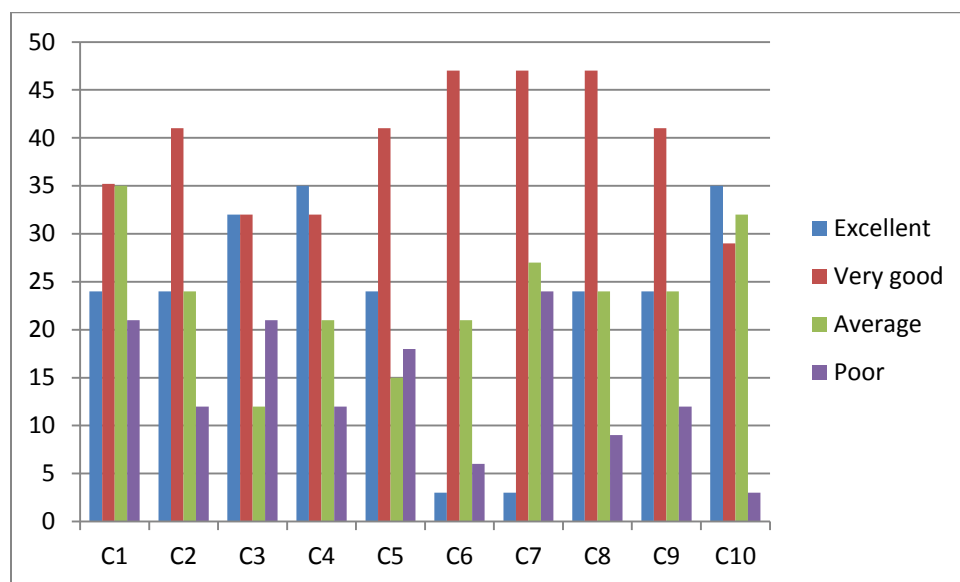


**DEPARTMENT OF BIOTECHNOLOGY
 FEEDBACK FROM STAKEHOLDERS AND ACTION TAKEN
 (2018-19)**

Feedback Analysis

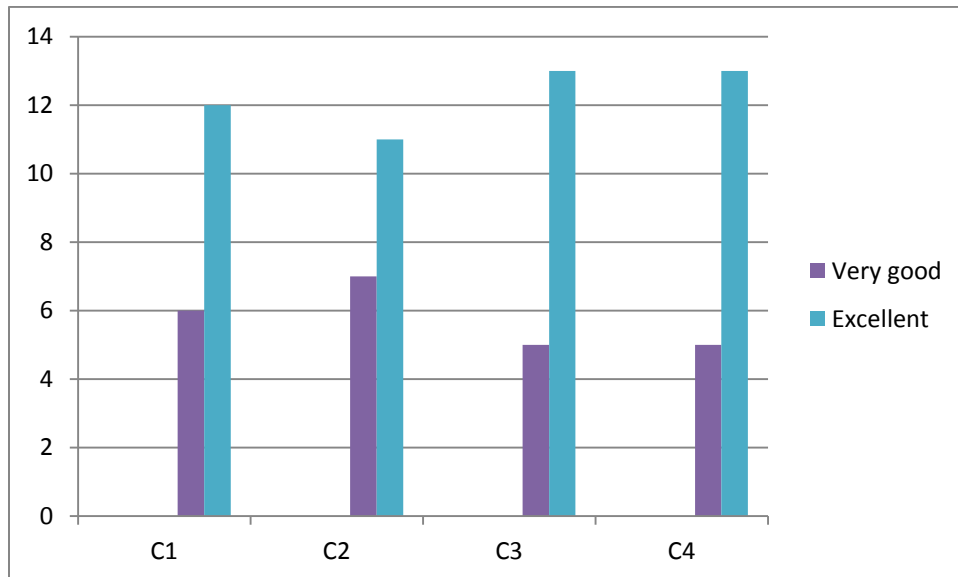
Student feedback

	Criterion used for analysis
C1	The curriculum is designed so as to enhance our employability
C2	The Courses studied by me have enhanced my knowledge as well as my skills and my capabilities
C3	The entire syllabus is completed in time
C4	Modern teaching aids, web-resources, multi-media, e-content etc. are used by most of the teachers while teaching
C5	The reference materials available in the University
C6	The curriculum is capable of supporting students in their higher studies
C7	The curriculum has the ability to foster entrepreneurial skills among the students
C8	How do you rate the sequence of units in the syllabus
C9	Rate the size of syllabus in terms of load on the student?
C10	How do you rate the objectives stated and relevance to the course content?



Alumni Feedback

	Criterion used for analysis
C1	Compare modern engineering tools for modeling and solving complex problems.
C2	Have you gained Competency in Biotechnology?
C3	Can you design, analyze, and interpret experimental data?
C4	After the Course, are you confident to design and model Bioprocess?



Action Taken

1. The curriculum should be capable of supporting students in their higher studies

Annexure 1

19BT2064	WORKSHOP PRACTICES FOR BIOTECHNOLOGISTS	L	T	P	C
		0	0	2	1

Course Objectives:

1. To impart knowledge on good Laboratory Practices
2. To impart knowledge on planning and procedures to develop models in biotechnology laboratories.
3. To impart knowledge on sequence of operations adopted in laboratories to fabricate models.

Course Outcomes:

1. Understand various laboratory tools and their applications.
2. Prepare basic solutions for chemical applications and their disposal.
3. Learn basic electrical processes involved in equipment and their trouble shooting.
4. Understand plumbing
5. Design and fabricate the various objects in sheet metal using hand tools.
6. Apply manufacturing process for various biotech applications.

List of Experiments:

1. Measurements, tools and its usages
2. Fundamental electricals, electronics and trouble shooting
3. Basics of laboratory safety, first aid and disposal process
4. Basics of calculations and measurements
5. Introductory plumbing
6. Computer hardware and installations
7. Sheet metal fabrication and carpentry

Table 2
PROFESSIONAL ELECTIVE COURSES

S. No.	Course Code	Course Name	Hours per Week			Credits
			L	T	P	
Elective – I						
1	19BT3009	Enzyme Technology and Industrial Applications	3	0	0	3

BIOTECHNOLOGY

11.15

2	19BT3010	Microbial Biotechnology	3	0	0	3
3	19BT3011	Agriculture and Food Biotechnology	3	0	0	3
4	19BT3012	Big Data Analytics	3	0	0	3
5	19BT3013	Bioethics and Biosafety	3	0	0	3
Elective – II						
1	19BT3014	Chemical Process Technology	3	0	0	3
2	19BT3015	Immunotechnology	3	0	0	3
3	19BT3016	Computational Biology	3	0	0	3
4	19BT3017	Metabolic Regulation and Engineering	3	0	0	3
5	19BT3018	Clinical trials and Bioethics	3	0	0	3
Elective – III						
1	19BT3019	Sustainable Bioprocess Development	3	0	0	3
2	19BT3020	Advanced Animal Biotechnology & Tissue Culture	3	0	0	3
3	19BT3021	Molecular Diagnostics	3	0	0	3
4	19BT3022	Drug Design and Discovery	3	0	0	3
Elective – IV						
1	19BT3023	Transport Phenomena	3	0	0	3
2	19BT3024	Pharmaceutical Biotechnology	3	0	0	3
3	19BT3025	Bioreactor Engineering	3	0	0	3
4	19BT3026	Stem Cell Therapeutics	3	0	0	3
5	19BT3027	Nanobiotechnology	3	0	0	3
Elective – V						
1	19BT3028	Advanced Plant Biotechnology	3	0	0	3
2	19BT3029	Cancer Management Techniques	3	0	0	3
3	19BT3030	Genomics and Proteomics	3	0	0	3
4	19BT3031	Advanced Environmental Biotechnology	3	0	0	3

2. The curriculum should have the ability to foster entrepreneurial skills among students

Annexure 2

Table 3

Category	S.No	Course Code	Name of the Course	Credits [L:T:P:C]
3.Engineering science	1	18ME1002	Engineering Graphics (AutoCAD)	0:0:2:1
	2	19BT2064	Workshop Practices for Biotechnologists	0:0:2:1
	3	18EE1003	Basic Electrical and Electronics Engineering	3:1:0:4
	4	18EE1004	Basic Electrical and Electronics Engineering Laboratory	0:0:2:1
	5	18CS1004	Programming for Problem Solving	3:0:0:3
	6	18CS1002	Programming for Problem Solving Lab	0:0:3:1.5
	7	19BT2002	Basics of Industrial Biotechnology	3:0:0:3
	8	19BT2003	Bioprocess Calculations	3:0:0:3
	9	19BT2004	Bio-analytical Techniques	3:0:0:3
	10	19BT2005	Bio-analytical Techniques Lab	0:0:3:1.5
	11	19CS2012	Artificial Intelligence for Biotechnology	3:0:0:3
Total credits				25

19BT2059	ENTREPRENEURSHIP, IPR AND BIOSAFETY	L	T	P	C
		3	0	0	0

Course Objectives:

1. To impart various aspects of product design and development
2. To inculcate concept generation and selection
3. To understand technology behind the product of the service

Course Outcomes:

1. Understand the principles of product design, basic management techniques, entrepreneurial skills and funding agencies.
2. Apply knowledge to the fundamentals of business plan, practical management concepts like leadership and motivation.
3. Induce entrepreneurial intent as well as innovation, scalability and marketing of the product.
4. Demonstrate the ability to provide a self-analysis in the context of an entrepreneurial career.
5. Assess the commercial viability of a new technology based idea to prototype and biosafety.
6. Transform research based ideas into feasibility and business plans and IPR.

Module 1: Concept of Entrepreneurship (5 hrs)

Concept and evolution of entrepreneurship, development of Entrepreneurship, stages in entrepreneurial process, entrepreneurship in India, Role of SSI in economic development, Government support for SSI.

Module 2: Societal Role in Entrepreneurship (4 hrs)

Role of society and family in the growth of an entrepreneur. Challenges faced by women in entrepreneurship.

Module 3: Product Process and Design (9 hrs)

Identification of business opportunities, project selection, contents, formulation, guidelines by planning commission for project report. Product design, importance, objectives, factors influencing product design, Product Development Process, sources of ideas for designing new products, stages in product design.

Module 4: Innovation and Prototype (9 hrs)

3. To arrange alumni talk on their industry experience

Annexure 3

11th National Level Technical Symposium (10th & 11th October, 2019) Programme Schedule

Registration	: 9:00 am
Inaugural ceremony	: 9:30 am to 10:30 am
Welcome Address	: Dr. S. Jacob K Annamalai, Dean - SABS
About the conference	: Dr. Jibu Thomas, Convenor - EVOGEN 19'
Presidential address	: Dr. P. Mannar Jawahar, Vice Chancellor, KITS
Release of Proceedings	
Honouring the Guest	
Felicitation	: Dr. R. Elijah Blessing, Registrar, KITS : Dr. E. J. James, Pro-Vice Chancellor (SO) : Dr. Ridling Margaret Waller, Pro-Vice Chancellor (QS) : Dr. Prince Arul Raj, Dean (ET) : Dr. C. Joseph Kennady, Dean (SSAMM)
Technical session I	
Lead lecture I	: Dr. Mukesh Doble, Professor Emeritus, IIT-Madras, Chennai.
Lead lecture II	: Dr. Latha Christie, Sr Scientist & Associate Director, DRDO, Ministry of Defence, Bengaluru.
Technical session II	
DAY-1	: Technical events(Oral presentation/ Poster Presentation/ Debate/ Quiz/ Bio war)
DAY-2	
Industry Academia Interaction	: Dr. Rajani Kanth Vangela, Managing Trustee, Director Institute for Applied Research & Innovation, Bengaluru. : Dr. T. Balashankar, Managing Director Clin Biocare Technology, Chennai : Mr. P. A. Balakumaran, Manger & Scientist R&D, Proklean Technologies Pvt Ltd., Chennai : Mr. Srinivasan, M.Pharm, Asst. General Manager & Outsourcing, Shield Healthcare Pvt. Ltd., Pondicherry
Alumni Interaction	: Mrs. Jerusha, Regulatory start up Specialist, IQVIA (Quintiles) : Dr. Jeya Mary Jacob, Phd-Chemical Engineering, (NIT Suratkal)Academician
Valedictory Session.	: Prizes & Certificate Distribution.
National Anthem	

DEPARTMENT OF BIOTECHNOLOGY

ALUMNI WEBINAR SERIES



Ms. S. Rohini

Executive, Biocon Biologies India Limited, Biocon house, Semicon park, Bangalore.
Topic: Downstream Processing of monoclonal antibodies, 7th May 2020, 10:30 AM
Meeting ID : 79416571899, Password : 6hZJKq
Staff Coordinator: Dr. David Paulraj



Mr. Ashok Kumar Muthusamy

Process Engineer
Abbvie Biologies Singapore Pte Ltd, Singapore
Topic: Introduction to Pharmaceutical Industry, 16th May 2020, 11:00 AM
Meeting ID : 97065332065, Password : 08S115
Staff Coordinator : Dr. Reya Issac



Mr. Arun Lal

Application Specialist - BD Biosciences, Issac Healthcare Services Co, W.L.L, Kuwait.
Topic: COVID-19 : Technology Solutions Enabling Diagnosis and Research, 8th May 2020, 09:30 AM,
Meeting ID : S7438S07510, Password : qGHIWvyFxm
Staff Coordinator : Dr. Jibu Thomas



Ms. Sharon Felix

Consultant Instructional Designer/Reviewer,
Origin Learning Solutions Private Limited, Chennai
Topic: eLearning The Future of Education and Enterprises, 15th May 2020, 05:00 PM
Meeting ID : 95995621056, Password : 263845
Staff Coordinator: Dr. David Paulraj



Mr. Jeshurun Mathansingh

MSD Pharmaceuticals Pvt Ltd (Merck), Gurgaon.
Topic: Indian Regulatory Affairs
14th May 2020, 11:50 PM
Meeting ID : 5494967504, Password : SGQ0DN
Staff Coordinator : Dr. Murugan



Mr. Arun John

Senior research fellow
Vision research Foundation, Chennai
Topic: Microsecond Simulation of the Proteoglycan-like Region of Carbonic Anhydrase IX-intrinsically disordered region, 19th May 2020, 11:00 AM
Meeting ID : 94571807825, Password : 162882
Staff Coordinator : Dr. Afroz Alam



Dr. Sachidanand Singh

Associate Professor and Dean, Faculty of Biotechnology, Institute of Bio-Sciences and Technology, Shri Ramswarop Memorial University, Lucknow- Deva Road, Barabanki, Uttar Pradesh, India
Topic: Identification of novel targets and their associated pathways for Rheumatoid Arthritis using next generation sequence data analysis, 6th May 2020, 12:00 PM,
Meeting ID : 88484979095, Password : 5nNCA5
Staff Coordinator : Dr. J. Jannet Vennila

Companies Represented:



JOIN THE WEBINAR VIA ZOOM



Karunya
DEEMED UNIVERSITY
SOLVING HUMAN PROBLEMS

4. Trainings to be given to students

Annexure 4



CBCS - Choose your time table

Enter student Register No.*:

Student Name*:

Select the Academic Term*:

Select the Subject*:

Subject Batch	Faculty Name	Time Table
No records to display.		

Student time table

Day	Hour 1	Hour 2	Hour 3	Hour 4	Hour 5	Hour 6	Hour 7	Hour 8	Hour 9	Hour 10
MON		18GA1001 General Aptitude and Career Skills-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18GA1001 General Aptitude and Career Skills-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18EN1001 English-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18MA1011 Differential Calculus, Complex Analysis and Laplace Transform-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II		18CS1004 Programming for Problem Solving-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18EE1003 Basic Electrical and Electronics Engineering-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18PH1009 Applied Physics and Properties of Matter-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	
TUE		18MA1011 Differential Calculus, Complex Analysis and Laplace Transform-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18CS1002 Programming for Problem Solving Lab-2018 BTech BioTech A Batch 1 - CTC Lab 13	18CS1002 Programming for Problem Solving Lab-2018 BTech BioTech A Batch 1 - CTC Lab 13	18CS1002 Programming for Problem Solving Lab-2018 BTech BioTech A Batch 1 - CTC Lab 13		18CH2001 Environmental Studies -2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18EE1003 Basic Electrical and Electronics Engineering-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18CS1004 Programming for Problem Solving-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	
WED		18GA1001 General Aptitude and Career Skills-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18GA1001 General Aptitude and Career Skills-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18MA1011 Differential Calculus, Complex Analysis and Laplace Transform-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II	18PH1009 Applied Physics and Properties of Matter-2018 BTech BioTech A Batch 1 - Biotech Gallery Hall - II		18EN1002 English Language Lab-2018 BTech BioTech A Batch 1 - Communication Lab	18EN1002 English Language Lab-2018 BTech BioTech A Batch 1 - Communication Lab		

6. Basic and application level knowledge to be imparted

Example of a revised lab- (30% revision)

Annexure 5

19BT2013	BIOPROCESS LAB	L	T	P	C
		0	0	3	1.5

Co-requisite: 19BT2012- Bioprocess Principles

Course Objectives:

1. To learn the culturing of microbes and quantifying biomass production
2. To provide extensive knowledge on enzyme kinetics
3. To learn immobilization techniques

Course Outcomes:

1. Acquire knowledge in the process of fermentation.
2. Demonstrate enzyme assay qualitatively and quantitatively
3. Examine factors affecting enzyme activity.
4. Apply methods to produce fermented products
5. Utilize solid state fermentation for production of fermented products
6. Assess the effect of substrate concentration on growth of microbes.

List of Experiments:

1. Culturing of Different Types of Microorganism
2. Estimation of Biomass Production by wet weight and dry weight method
3. Effect of Substrate Concentration on Growth of E-coli
4. Effect of pH on Enzyme Activity
5. Effect of Temperature on Enzyme Activity
6. Immobilization of α - Amylase Enzyme by entrapment method
7. Estimation of volumetric mass transfer coefficient

-
8. Citric acid production by Solid State Fermentation
 9. Qualitative Enzyme Assay- Starch Plate Technique
 10. Quantitative Enzyme Assay
 11. Production of Wine
 12. Production of Amylase from *Bacillus subtilis* and Assaying for its Activity

19BT2055	MATLAB PROGRAMMING	L	T	P	C
		3	0	0	3

Course Objectives:

1. To ensure students to having strong foundation in matlab installation, configuration and basic syntax.
2. To introduce them to various string operations, functions and advanced matlab modules for plotting and graphics.
3. To understand the applications of Matlab modules for various biological applications.

Course Outcomes:

1. Identify installation, configuration and environmental setup of Matlab.
2. Demonstrate the usage of basic syntax and structure of Matlab
3. Apply knowledge of data types, operators and control structures to pseudocode
4. Analyze script functionality and offer improved performance in structure
5. Appraise structural validity, reproducibility of used Matlab functions
6. Formulate biological applications in areas such as sequence processing, sequence analysis.

Module 1: Fundamentals (7 Hrs)

Action Taken Report

Students Feedback	
The curriculum should be capable of supporting students in their higher studies	Workshop Practices for Biotechnologists Laboratory for UG was introduced in 2019. Professional electives such as Tissue Engineering, Pathology and Microbiology, Animal Biotechnology and Cell Culture, Plant Tissue Culture, Protein Engineering, Molecular Forensics were included to support higher studies. (Annexure 1)
The curriculum should have the ability to foster entrepreneurial skills among students	Introductory AI in Biotechnology was introduced for PG. Workshop Practices for Biotechnologists Laboratory for UG was introduced In addition to the existing course on Entrepreneurship, IPR and Biosafety included in the curriculum (Annexure 2)
To arrange alumni talk on their industry experience	Various alumni interactive sessions were organized in 2020. Industry Interaction sessions were arranged in Technical events. (Annexure 3)
Employer Feedback	
Trainings to be given to students	Courses on aptitude training, soft skills are offered to the students. (Annexure 4)
Market and industry awareness to be given to students	Interactive sessions with alumni were arranged through alumni lectures and technical events. (Annexure 3)
Basic and application level knowledge to be imparted	Workshop Practices for Biotechnologists Laboratory for UG was introduced and all other laboratory sessions were revised. Programming papers were included. (Annexure 5)