



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in, www.klef.edu.in, www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129

Date: 14/11/2023

MINUTES OF XXXI BOARD OF STUDIES MEETING

The Department Board of Studies meeting was conducted on 14/11/2023 in offline mode from 10:00 am to 12:30 pm Dr. K Srinivasulu, HoD-BT, as a chair.

Dr. K Srinivasulu, Chairman of BoS, opened the meeting remarks by welcoming and introducing the external members to the internal and special invite members and thanking them for accepting to become members of the Board of Studies. Chairman put forward the Agenda items before the Board of Studies meeting.

The following items of the agenda were placed for consideration before the Board of Studies in Biotechnology at its present meeting.

AGENDA and RESOLUTIONS

AGENDA ITEM-I

To consider and approve the curriculum for 2023-24 admitted batch of B.Tech & M.Tech and the minor changes proposed in curriculum of 2022-23 admitted batch of B.Tech as per the suggestions and feedback received from stake holders discussed in DAC.	Approved and recommended for Academic Council
---	---

RESOLUTION: Curriculum for 2023-24 B.Tech & M.Tech and the minor changes proposed in curriculum of 2022-23 admitted batches have been approved by BoS members and recommended to Academic council. Course structure of 2023-24 and 2022-23, batches have been furnished in (Annexure: I).

AGENDA ITEM-II

To consider and approve the revisions proposed by the course coordinators in syllabus / Course Outcomes /experiments / teaching pedagogies for the courses to be offered in 2023-2024 academic year.	Approved and recommended for Academic Council
--	---

RESOLUTION: The revisions proposed by the stake holders and course coordinators in syllabus/Course Outcomes /experiments / teaching pedagogies for the courses to be

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ✦ Approved by AICTE ✦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129.

offered in 2023-2024 admitted batch has been approved by BoS members and recommended to Academic council. Syllabi of 2023-2024 batches have been furnished in (Annexure: II).

AGENDA ITEM-III

To consider and approve the resolutions made by XXXIV DAC conducted on 11 th November 2023.	Approved and recommended for Academic Council
--	---

RESOLUTION: The points discussed in DAC meeting were approved by BoS members and recommended to Academic council. DAC minutes and proofs mentioned in (Annexure: III).

AGENDA ITEM-IV

To approve the feedback from stakeholders regarding 2023-24 batch admitted students	Approved and recommended for Academic Council
---	---

RESOLUTION: Feedback from stakeholders regarding upcoming 2023-24 batch have been approved by BoS members and recommended to Academic council. Action Taken Report has been attached as Annexure-IV.

AGENDA ITEM-V

To consider and approve the list of new courses for 2023-2024 admitted batch.	Approved and recommended for Academic Council
---	---

RESOLUTION: Upon discussion, all the BOS members approved the incorporation of following new courses into the curriculum from the Academic Year 2023-2024 which improves the skill set of students in process engineering tools, medical lab technology, analytical and optical instrumentation, bioinstrumentation, computer aided drug design, genomic data science and clustering and to learn the aspects of quality control with respect to value added products by learning aspects of biochemical engineering, drug design: principles

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ❖ Approved by AICTE ❖ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

The following members have attended the XXXIV Board of studies (BOS) meeting held on 14/11/2023 at C501 from 10:00 am to 12:30 pm

S.N o	FULL NAME	DESIGNATION	ORGANIZATION	POSITION IN THE MEETING	SIGNATURE
1	Dr.Rjendra Kumar Pallakurthy	AGM	Hetero Biopharma- Telangana	External	
2	Dr.A Matta Reddy	Professor	Adikavi Nannaya University-AP	External	
3	Dr.Kante Rajesh Kumar	Alumni	Manager-Santha Biotech, Hyderabad, Telanagana	External	
4	Dr.K.Srinivasulu	Professor & HOD	Biotechnology	Chairman	
5	Dr.V.Praveen Kumar	Deputy Head & Assoc. Professor	Biotechnology	Secretary	
6	Dr.JayaKumar Singh	Professor & Dean R&D	Biotechnology	Internal member	
7	Dr.M Janaki Ramaiah	Professor	Biotechnology	Internal member	
8	Dr.BVLS Prasad	Professor	Biotechnology	Internal member	
9	Dr.Ashish Runthala	Assoc. Professor &	Biotechnology	Special Invitee	
10	Dr.M.Sudhamani	Assoc. Professor	Biotechnology	Special Invitee	
11	Dr.M.Maheswara Reddy	Asst. Professor	Biotechnology	Internal member	
12	Dr.G.Siva Reddy	Asst. Professor- Professor incharge Academics	Biotechnology	Internal member	

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in, www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph. +91 - 866 - 3500122, 2577715, 2576129.

13	Dr.Y V Rajesh	Asst. Professor	Biotechnology	Special Invitee	
14	Dr.Nadeem Siddiqui	Assoc. Professor	Biotechnology	Internal member	
15	Dr.Sarada Prasanna Mallick	Asst. Professor	Biotechnology	Special Invitee	
16	2000010060-Aarya HarshalSuryawanshi	IV th Year	Biotechnology	Special Invitee	
17	2000010092-Cherkuri Anupama	IV th Year	Biotechnology	Special Invitee	
18	210010014-T Praveen	IIIrd Year	Biotechnology	Special Invitee	
19	210010001-A Thanay	IIIrd Year	Biotechnology	Special Invitee	
20	2200010051-Mythri	IInd Year	Biotechnology	Special Invitee	
21	2200010068-Alekya	IInd Year	Biotechnology	Special Invitee	

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200. www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Annexure-I: Program structure (with all Courses) containing following categorization

Sl No	Course Code	Course Title	Category	L	T	P	S	Cr	CH	Pre-requisite	New/ Revised/ Retained Course	Stakeholder feedback based on which change was proposed	Focused on Employability/ Entrepreneurship/ Skill Development or Career Advancement
1	23UC0017	INDIAN KNOWLEDGE SYSTEMS - VEDIC MATHEMATICS	AUC	0	0	0	2	0	2	NIL	Retained Course		Employability
2	23UC0018	FUNDAMENTALS OF MATHEMATICS	AUC	3	0	0	0	0	3	NIL	Retained Course		Employability
3	22UC0011	GENDER & SOCIAL EQUALITY	AUC	2	0	0	0	0	2	NIL	Retained Course		Employability
4	23UC0019	ESSENCE OF INDIAN KNOWLEDGE TRADITION	AUC	2	0	0	0	0	2	NIL	Retained Course		Employability
5	22UC0008	INDIAN CONSTITUTION	AUC	2	0	0	0	0	2	NIL	Retained Course		Employability
6	22UC0009	ECOLOGY & ENVIRONMENT	AUC	2	0	0	0	0	2	NIL	Retained Course		Employability
7	22UC0020T	ANCIENT INDIAN COMPUTING: A HISTORICAL AND CULTURAL PERSPECTIVE	AUC	2	0	0	0	0	2	NIL	Retained Course		Employability
8	23UC1101	INTEGRATED PROFESSIONAL ENGLISH	HAS	0	0	4	0	2	4	NIL	Retained Course		Employability
9	23UC1202	ENGLISH PROFICIENCY	HAS	0	0	4	0	2	4	NIL	Retained Course		Employability
10	22UC2103	ESSENTIAL SKILLS FOR EMPLOYABILITY	HAS	0	0	4	0	2	4	NIL	Retained Course		Employability
11	22UC2204	CORPORATE READINESS SKILLS	HAS	0	0	4	0	2	4	NIL	Retained Course		Employability
12	22UC0010	UNVIERSAL HUMAN VALUES & PROFESSIONAL ETHICS	HAS	2	0	0	0	2	2	NIL	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddoswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129.

13	22UC1203	DESIGN THINKING & INNOVATION	HAS	0	0	4	0	2	4	NIL	Retained Course		Skill Development
14	22UC0012	INNOVATION MANAGEMENT	HAS	0	0	4	0	2	4	NIL	Retained Course		Employability
15	22MBXXXX	MANAGEMENT ELECTIVE	HAS	2	0	0	0	2	2	NIL	Retained Course		Employability
16	22FLXXXX	FOREIGN LANGUAGE ELECTIVE	HAS	2	0	0	0	2	2	NIL	Retained Course		Employability
17	23UC0021	SOCIAL IMMERSIVE LEARNING - 1	SIL	0	0	0	4	1	4	NIL	Retained Course		Skill Development
18	23UC0022	SOCIAL IMMERSIVE LEARNING - 2	SIL	0	0	0	4	1	4	NIL	Retained Course		Skill Development
19	23UC0023	SOCIAL IMMERSIVE LERANING - 3	SIL	0	0	0	4	1	4	NIL	Retained Course		Skill Development
20	23UC0024	SOCIAL IMMERSIVE LEARNING - 4	SIL	0	0	0	4	1	4	NIL	Retained Course		Skill Development
21	23UC0025	SOCIAL IMMERSIVE LEARNING - 5	SIL	0	0	0	4	1	4	NIL	Retained Course		Skill Development
22	22MTXXXX	MATHEMATICS ELECTIVE - 1 (MFC)	BSC	2	2	0	0	4	4	NIL	Retained Course		Employability
23	22MTXXXX	MATHEMATICS ELECTIVE - 2 (MFE)	BSC	2	2	0	0	4	4	NIL	Retained Course		Employability
24	22MTXXXX	MATHEMATICS ELECTIVE - 3	BSC	2	2	0	0	4	4	NIL	Retained Course		Employability
26	22MTXXXX	MATHEMATICS ELECTIVE - 4	BSC	3	0	2	0	4	5	NIL	Retained Course		Employability
27	22SCXXXX	SCIENCE ELECTIVE-1	BSC	3	0	2	0	4	5	NIL	Retained Course		Employability
28	22SCXXXX	SCIENCE ELECTIVE-2	ESC	3	0	2	4	5	9	NIL	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Gopurpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

29	22SCXXXX	SCIENCE ELECTIVE-3	ESC	2	0	2	4	4	8	CTSD	Retained Course		Employability
30	22ME1103	DESIGN TOOL WORKSHOP	ESC	0	0	4	0	2	4	NIL	Retained Course		Employability
31	23EC1203	BASIC ELECTRICAL & ELECTRONIC CIRCUITS	ESC	2	0	0	0	2	2	NIL	Retained Course		Employability
32	22UC3108	PROBLEM SOLVING & REASONING SKILLS-1	ESC	0	0	0	4	1	4	NIL	Retained Course		Employability
33	22UC3209	PROBLEM SOLVING & REASONING SKILLS-2	ESC	0	0	0	4	1	4	NIL	Retained Course		Employability
34	22BT1202	BIOCHEMICAL THERMODYNAMICS	ESC	3	0	2	0	4	5	NIL	Retained Course		Employability
35	23SC1203	COMPUTATIONAL THINKING FOR OBJECT-ORIENTED DESIGN	ESC	2	0	2	4	4	8	CTSD	Retained Course		Employability
36	22SC1201	OBJECT ORIENTED PROGRAMMING	ESC	3	0	4	0	5	7	CTSD	Retained Course		Employability
37	22SC1202	DATA STRUCTURES	ESC	3	0	2	4	5	9	CTSD	Retained Course		Employability
38	22BT2103R	BIOCHEMISTRY	PCC	2	0	2	0	3	4	NIL	Retained Course		Employability
39	22BT2103A	BIOCHEMISTRY	PCC	3	0	4	0	5	7	NIL	Retained Course		Employability
40	22BT2103P	BIOCHEMISTRY	PCC	3	0	4	0	5	7	NIL	Retained Course		Employability
41	22BT2104	MICROBIOLOGY	PCC	2	0	2	0	3	4	NIL	Retained Course		Employability
42	22BT2105R	IMMUNOLOGY	PCC	2	0	4	0	4	6	NIL	Retained Course		Employability
43	22BT2105A	IMMUNOLOGY	PCC	3	1	4	0	6	8	NIL	Retained Course		Employability
44	22BT2105P	IMMUNOLOGY	PCC	3	1	4	0	6	8	NIL	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDASWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s, 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129.

45	22BT2206	MOLECULAR BIOLOGY	PCC	3	0	0	0	3	3	NIL	Retained Course		Employability
46	22BT2207R	BIOANALYTICAL TECHNIQUES	PCC	2	0	2	0	3	4	BC	Retained Course		Employability
47	22BT2207A	BIOANALYTICAL TECHNIQUES	PCC	3	0	4	0	5	7	BC	Retained Course		Employability
48	22BT2207P	BIOANALYTICAL TECHNIQUES	PCC	3	0	4	0	5	7	BC	Retained Course		Employability
49	22BT2208	TRANSPORT PROCESS IN BIOLOGICAL SYSTEMS	PCC	2	0	4	0	4	6	NIL	Retained Course		Employability
49	22BT2209R	BIOCHEMICAL REACTION ENGINEERING	PCC	2	0	4	0	4	6	MB	Retained Course		Employability
50	22BT2209A	BIOCHEMICAL REACTION ENGINEERING	PCC	3	1	4	0	6	8	MB	Retained Course		Employability
51	22BT2209P	BIOCHEMICAL REACTION ENGINEERING	PCC	3	1	4	0	6	8	MB	Retained Course		Employability
52	22BT3110R	GENETIC ENGINEERING	PCC	2	0	4	0	4	6	NIL	Retained Course		Employability
53	22BT3110A	GENETIC ENGINEERING	PCC	3	1	4	0	6	8	NIL	Retained Course		Employability
54	22BT3110P	GENETIC ENGINEERING	PCC	3	1	4	0	6	8	NIL	Retained Course		Employability
55	22BT3111	FERMENTATION TECHNOLOGY	PCC	2	0	2	0	3	4	MB	Retained Course		Employability
56	22BT3212	PLANT AND ANIMAL BIOTECHNOLOGY	PCC	2	0	4	0	4	6	NIL	Retained Course		Employability
57	22BT3213R	DOWNSTREAM PROCESSING	PCC	2	0	4	0	4	6	BAT	Retained Course		Employability
58	22BT3213A	DOWNSTREAM PROCESSING	PCC	3	1	4	0	6	8	BAT	Retained Course		Employability
59	22BT3213P	DOWNSTREAM PROCESSING	PCC	3	1	4	0	6	8	BAT	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddaswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129

60		FLEXI-CORE – 1	PCC	2	0	2	0	3	4	RELEVENT COURSE	Retained Course		Employability
61		FLEXI-CORE – 2	PCC	2	0	2	0	3	4	RELEVENT COURSE	Retained Course		Employability
62		FLEXI-CORE – 3	PCC	3	0	0	0	3	3	RELEVENT COURSE	Retained Course		Employability
63		PROFESSIONAL ELECTIVE – 1	PEC	2	0	2	4	4	8	RELEVENT COURSE	Retained Course		Employability
64		PROFESSIONAL ELECTIVE – 1	PEC	3	0	4	4	6	11	RELEVENT COURSE	Retained Course		Employability
65		PROFESSIONAL ELECTIVE – 1	PEC	3	0	4	4	6	11	RELEVENT COURSE	Retained Course		Employability
66		PROFESSIONAL ELECTIVE – 2	PEC	2	0	2	0	3	4	RELEVENT COURSE	Retained Course		Employability
67		PROFESSIONAL ELECTIVE – 3	PEC	2	0	2	4	4	8	RELEVENT COURSE	Retained Course		Employability
68		PROFESSIONAL ELECTIVE – 3	PEC	3	0	4	4	6	11	RELEVENT COURSE	Retained Course		Employability
69		PROFESSIONAL ELECTIVE – 3	PEC	3	0	4	4	6	11	RELEVENT COURSE	Retained Course		Employability
70		PROFESSIONAL ELECTIVE – 4	PEC	3	0	0	0	3	3	RELEVENT COURSE	Retained Course		Employability
71		PROFESSIONAL ELECTIVE – 4	PEC	4	0	0	0	4	4	RELEVENT COURSE	Retained Course		Employability
72		PROFESSIONAL ELECTIVE – 5	PEC	2	0	2	0	3	4	RELEVENT COURSE	Retained Course		Employability
73		SKILL DEVELOPMENT PROJECT – 1	SDC	0	0	2	4	2	6	RELEVENT COURSE	New course	Industry Peer	Skill Development
74		SKILL DEVELOPMENT PROJECT – 1	SDC	0	0	6	4	4	10	RELEVENT COURSE	New course	Industry Peer	Skill Development
75		SKILL DEVELOPMENT PROJECT – 1	SDC	0	0	6	4	4	10	RELEVENT COURSE	New course	Industry Peer	Skill Development

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDASWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129.

76		SKILL DEVELOPMENT PROJECT - 2	SDC	0	0	2	4	2	6	RELEVANT COURSE	New course	Academic Peer	Skill Development
77		SKILL DEVELOPMENT PROJECT - 2	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Academic Peer	Skill Development
78		SKILL DEVELOPMENT PROJECT - 2	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Academic Peer	Skill Development
79		SKILL DEVELOPMENT PROJECT - 3	SDC	0	0	2	4	2	6	RELEVANT COURSE	New course	Faculty	Skill Development
80		SKILL DEVELOPMENT PROJECT - 3	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Faculty	Skill Development
81		SKILL DEVELOPMENT PROJECT - 3	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Faculty	Skill Development
82		SKILL DEVELOPMENT PROJECT - 4 (SPECIALIZATION)	SDC	0	0	2	4	2	6	RELEVANT COURSE	New course	Industry Peer	Skill Development
83		SKILL DEVELOPMENT PROJECT - 4 (SPECIALIZATION)	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Industry Peer	Skill Development
84		SKILL DEVELOPMENT PROJECT - 4 (SPECIALIZATION)	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Industry Peer	Skill Development
85		SKILL DEVELOPMENT PROJECT - 4 (MINOR - MULTI DISCIPLINARY)	SDC	0	0	6	4	4	10	RELEVANT COURSE	New course	Industry Peer	Skill Development
86		TOOL BASED LEARNING - 1	SDC	0	0	0	4	0	4	RELEVANT COURSE	Retained Course		Skill Development
87		TOOL BASED LEARNING - 2	SDC	0	0	0	4	0	4	RELEVANT COURSE	Retained Course		Skill Development
88	22IE2040	SOCIAL INTERNSHIP	PRI	0	0	0	4	0	4	RELEVANT COURSE	Retained Course		Skill Development
89	22IE3041	TECHNICAL INTERNSHIP	PRI	0	0	0	8	0	8	RELEVANT COURSE	Retained Course		Skill Development
90	22IE4043	RESEARCH INTERNSHIP	PRI	0	0	0	8	0	8	RELEVANT COURSE	Retained Course		Skill Development
91	22IE3042	RESEARCH SEMINAR	PRI	0	0	2	4	2	6	RELEVANT COURSE	Retained Course		Skill Development

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Musunuri Road, Gopalapet, Vijayawada - 520 002. Ph: 081 - 856 - 3500122, 2577715, 2576129.

92	22IE3043	TERM PAPER	PRI	0	0	4	0	2	4	RELEVANT COURSE	Retained Course		Skill Development
93	22IE4053R	ENGINEERING CAPSTONE PROJECT - PHASE 1	PRI	0	0	6	12	6	18	RELEVANT COURSE	Retained Course		Skill Development
94	22IE4053A	ENGINEERING CAPSTONE PROJECT - PHASE 1	PRI	0	0	8	16	8	24	RELEVANT COURSE	Retained Course		Skill Development
95	22IE4054R	ENGINEERING CAPSTONE PROJECT - PHASE 2	PRI	0	0	6	12	6	18	RELEVANT COURSE	Retained Course		Skill Development
96	22IE4054A	ENGINEERING CAPSTONE PROJECT - PHASE 2	PRI	0	0	8	16	8	24	RELEVANT COURSE	Retained Course		Skill Development
97	22IE4048	ENGINEERING PROJECT	PRI	0	0	6	12	6	18	RELEVANT COURSE	Retained Course		Skill Development
98	22IE4051	INDUSTRIAL INTERNSHIP - PHASE 1	PRI	0	0	0	24	6	24	RELEVANT COURSE	Retained Course		Skill Development
99	22IE4052	INDUSTRIAL INTERNSHIP - PHASE 2	PRI	0	0	0	24	6	24	RELEVANT COURSE	Retained Course		Skill Development
100	22IE4042	INDUSTRIAL INTERNSHIP	PRI	0	0	0	24	6	24	RELEVANT COURSE	Retained Course		Skill Development
101		OPEN ELECTIVE - 1	OEC	3	0	0	0	3	3	RELEVANT COURSE	Retained Course		Skill Development
102		OPEN ELECTIVE - 2	OEC	3	0	0	0	3	3	RELEVANT COURSE	Retained Course		Skill Development
103		OPEN ELECTIVE - 3	OEC	3	0	0	0	3	3	RELEVANT COURSE	Retained Course		Skill Development
104		VALUE ADDED COURSE-1	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development
105		VALUE ADDED COURSE-2	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development
106		VALUE ADDED COURSE-3	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development
107		VALUE ADDED COURSE-4	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302; Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129

108		VALUE ADDED COURSE-5	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development
109		SPORTS/YOGA CERTIFICATION	VAC	0	0	0	8	0	0	N/A	Retained Course		Skill Development
Percentage of Syllabus Revision= $16 \times 100 / 74 = 21.62\%$													
Percentage of Courses focusing on Employability= $30 / 74 = 40.54\%$													
Percentage of Courses focusing on Entrepreneurship= $5 / 74 = 6.75\%$													
Percentage of Courses focusing on Skill Development = $39 / 74 = 52.70\%$													

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350260; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Musurum Road, Governorpet, Vijayawada - 520 002, PH: +91 - 866 - 3500122, 2577715, 2576129.

Annexure-I: Program structure (with all Courses) containing following categorization

Sl No	COURSE CODE	COURSE TITLE	SHORT NAME	MODE	L	T	P	S	Cr	CH	PRE-REQUISITE	New/ Revised/ Retained Course	Stakeholder feedback based on which change was proposed	Focused on Employability/ Entrepreneurship/ Skill Development or Career Advancement
1	23BT5124	MATHEMATICS AND BIOSTATISTICS	MBIS	R	2	2	0	0	4	4	NIL	Retained Course		Employability
2	23UC5201	PROFESSIONAL COMMUNICATION SKILLS	PCS	R/M	0	0	4	0	0	4	NIL	New Course	Academic Peer	Employability
3	23BT5111	BICREACTOR MODELLING AND SIMULATION	BMS	R	0	0	4	0	0	4	NIL	Retained Course		Employability
4		OPEN ELECTIVE	OE	M	3	0	0	0	3	3	NIL	New Course	Industry Peer	Employability
5	23BT5121	BIOCHEMICAL ENGINEERING	BCE	R	3	0	2	0	4	5	NIL	Retained Course		Employability
6	23BT5122	MOLECULAR BIOLOGY & r-DNA TECHNOLOGY	MG&rDNAT	R	2	0	2	4	4	8	NIL	Retained Course		Skill development
7	23BT5123	APPLIED BIOINFORMATICS	ABI	R	3	0	2	0	4	5	NIL	Retained Course		Employability
8	23BT5225	IMMUNOTECHNOLOGY	IMMT	R	2	0	2	0	3	4	NIL	Retained Course		Employability
9	23BT5226	DOWNSTREAM PROCESSING	DSP	R	3	0	2	0	4	5	NIL	Retained Course		Employability
10		PROFESSIONAL ELECTIVE-1	PE-1	R	2	0	2	0	3	4	BCE	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

11		PROFESSIONAL ELECTIVE-2	PE-2	R	2	0	2	0	3	4	MG&rDNAT	Retained Course		Employability
12		PROFESSIONAL ELECTIVE-3	PE-3	R	3	0	2	0	4	5	ABI	Retained Course		Employability
13		PROFESSIONAL ELECTIVE-4	PE-4	R/M	3	0	0	0	0	0	IMMT	Retained Course		Employability
14		PROFESSIONAL ELECTIVE-5	PE-5	M	3	0	0	0	3	0	MG&rDNAT	Retained Course		Employability
15	23IE5201	ESSENTIALS OF RESEARCH DESIGN	ERD	R	2	0	0	0	0	2	NIL	New Course	Industry Peer	Skill development
16	23IE5102	COLLOQUIUM-1	COL-1	M	2	0	0	0	0	0	NIL	New Course	Industry Peer	Enterprenership
17	23IE5149	TERM PAPER	TP	R	0	0	8	0	4	8	NIL	Retained Course		Skill development
18	23IE5203	COLLOQUIUM-2	COL-2	M	2	0	0	0	0	0	NIL	New Course	Industry Peer	Enterprenership
19	23IE6150	DISSERTATION	PR	R	0	0	32	0	16	24	NIL	Retained Course		Skill development
20	23IE6104	COLLOQUIUM-3	COL-3	M	2	0	0	0	0	0	NIL	New Course	Industry Peer	Enterprenership
21	23IE6250	DISSERTATION	DIS	R	0	0	32	0	16	24	NIL	Retained Course		Skill development
22	23IE6205	COLLOQUIUM-4	COL-4	M	2	0	0	0	0	0	NIL	New Course	Industry Peer	Enterprenership
23		BASE SAS	SAS	R/M	2	0	0	0	0	2	NIL	New Course	Academic Peer	Skill development

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

24		REGULATORY AFFAIRS AND CLINICAL TRIALS	RA&CT	R/M	2	0	0	0	0	2	NIL	New Course	Faculty	Skill development
PROFESSIONAL ELECTIVE-1														
1	23BT51J1	BIOREACTOR OPERATIONS	BO	PE1	2	0	2	0	3	4	BCE	Retained Course		Employability
2	23BT51J2	BIOPROCESS VALIDATION AND cGMP	BV&cGMP	PE1	2	0	2	0	3	4	BCE	Retained Course		Employability
3	23BT51J3	ENZYME SCIENCE AND TECHNOLOGY	EST	PE1	2	0	2	0	3	4	BCE	Retained Course		Employability
PROFESSIONAL ELECTIVE-2														
1	23BT52K1	BIOMATERIALS & TISSUE ENGINEERING	BM&TE	PE2	2	0	2	0	3	4	MG&rDNAT	Retained Course		Employability
2	23BT52K2	BIOSIMILLAS	BS	PE2	2	0	2	0	3	4	MG&rDNAT	Retained Course		Employability
3	23BT52K3	STEM CELL TECHNOLOGY	SCT	PE2	2	0	2	0	3	4	MG&rDNAT	Retained Course		Employability
PROFESSIONAL ELECTIVE-3														
1	23BT52L1	MOLECULAR MODELLING AND DRUG DESIGN	MMDD	PE3	3	0	2	0	4	5	ABI	Retained Course		Employability
2	23BT52L2	NGS SEQUENCING AND DATA ANALYSIS	NGS	PE3	3	0	2	0	4	5	ABI	Retained Course		Employability

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)


Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

3	23BT52L3	PYTHON AND R PROGRAMMING	P&RP	PE3	3	0	2	0	4	5	ABI	Retained Course		Employability
PROFESSIONAL ELECTIVE-4														
1	23BT52M1	GENOMICS AND PROTEOMICS	GP	PE4	3	0	0	0	3	3	IMMT	Retained Course		Employability
2	23BT52M2	INTELLECTUAL PROPERTY RIGHTS, BIOSAFETY AND BIOETHICS	IPR	PE4	3	0	0	0	3	3	IMMT	Retained Course		Employability
3	23BT52M3	PROTEIN ENGINEERING	PE	PE4	3	0	0	0	3	3	IMMT	Retained Course		Employability
PROFESSIONAL ELECTIVE-5														
1	23BT53N1	FOOD TECHNOLOGY	FT	PE5	3	0	0	0	3	3	MG&rDNAT	Retained Course		Employability
2	23BT53N2	NANOBIOTECHNOLOGY	NBT	PE5	3	0	0	0	3	3	MG&rDNAT	Retained Course		Employability
3	23BT53N3	SYNTHETIC BIOLOGY	SB	PE5	3	0	0	0	3	3	MG&rDNAT	Retained Course		Employability
Percentage of Syllabus Revision=9*100/24=37.50%														
Percentage of Courses focusing on Employability= 13/24=54.16%														
Percentage of Courses focusing on Entrepreneurship= 4/24=16.66%														
Percentage of Courses focusing on Skill Development = 7/24=29.16%														


 Head
 Department of Biotechnology
 Koneru Lakshmaiah Education Foundation
 (Deemed to be University)
 VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Annexure-II: Course wise Syllabus revision of approved structure as mentioned in Annexure-I

Course Code	Course Title	Course Category	Existing Syllabus	New Syllabus	Topics added/ removed/ replaced	Changes in Course Outcome(s)	Justification for the modifications	Revision (%)
22BT2209A	Biochemical Reaction Engineering	PCC	Introduction to Biochemical Reaction Engineering, Interpretation of Batch reactor data, Design of CSTR, Bioreactor systems	Introduction to Biochemical Reaction Engineering, Interpretation of Batch reactor data, Design of CSTR, Bioreactor systems, Apply and analyze chemical and biological kinetics for better yield of product formation.	Apply and analyze chemical and biological kinetics for better yield of product formation.	CO4	As per the syllabus received from stakeholders, we have revised the syllabus for 20223-2024 admitted batch	20%
22BT2207A	Bio analytical Techniques	PCC	Centrifugation, Chromatography, Electrophoresis, Spectroscopy	Centrifugation, Chromatography, Electrophoresis, Spectroscopy, Microscopy, LC-MS, GC-MS	Microscopy, LC-MS, GC-MS	CO4	As per the syllabus received from stakeholders, we have revised the syllabus for 20223-2024 admitted batch	15%
22ET2105A	Immunology	PCC	Basics of Immunology, Immune response, Complement system, Immunological Techniques	Basics of Immunology, Immune response, Complement system, Immunological Techniques, Different immunological assays	Different immunological assays	CO4	As per the syllabus received from stakeholders, we have revised the syllabus for 20223-2024 admitted batch	15%

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129.

Annexure III

To
Dean / Addl. Dean Academics,
KLEF,
Vaddeswaram.

Dear Sir,

Sub: Minutes of the XXXIV DAC meeting-Department of Biotechnology held on 11-11-2023 in C-501 from 3:30 PM to 05:00 PM Reg.,

The **XXXIV DAC** of Department of Biotechnology for 2023-24 Even Semester is conducted on **11-11-2023** in offline mode from **3:30 PM to 05:00 PM** at **C501**. The details of minutes and annexure of DAC conducted are attached below.

Thanking You,

Yours sincerely

Dr.K Srinivasulu

Chairman DAC – BIOTECHNOLOGY

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200, www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129.

Minutes of the XXXIV DAC meeting-Department of Biotechnology was held on 11-11-2023 in offline mode from 03:30pm to 05:00pm at C501.

Agenda Item-I

PDD (M.Tech and B.Tech) of new program Structure highlighting Local/Regional/National/Global needs and Mapping to courses.	Approved
--	----------

Resolution: PDD (M.Tech and B.Tech) of new program Structure highlighting Local/Regional/National/Global needs and Mapping to courses has been approved and recommended to BoS by DAC. Program development document of 2023-2024 admitted batch have been furnished in **Annexure-I**.

Agenda Item-II

To consider the approval of proposal for launching certificate courses for 2021-22 and 2022-23 admitted batches.	Approved
--	----------

Resolution: The following value added courses for 2021-22 and 2022-23 admitted batches have been introduced, approved and recommended by DAC to BoS. List of courses have been furnished in **Annexure-II**.

Agenda Item-III

Proposal of B.Tech and M.Tech Y23 batch structure along with Employability, Entrepreneurship and skill development categorizations.	Approved
---	----------

Resolution: Curriculum for 2023-24 B.Tech & M.Tech admitted batches has been approved by DAC members and recommended to BoS. Course structure of 2023-2024 admitted batch has been furnished in **Annexure-III**.

Agenda Item-IV

To consider and approve the revisions proposed by the course coordinators in syllabus / Course Outcomes /experiments / teaching pedagogies for the courses to be offered in 2023-2024 Even Semester.	Approved
--	----------

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129.

Resolution: The revisions proposed by the course coordinators in syllabus/Course Outcomes /experiments / teaching pedagogies for the courses to be offered in 2021-2022, 2022-23 admitted batches has been approved by DAC members and recommended to BoS. Syllabi of 2021-2022 and 2022-23 admitted batches have been furnished in **Annexure-IV**.

Agenda Item-V

Proposal of moocs courses for the year of 2021-22 & 2022-2023 admitted batches	Approved
--	----------

Resolution: The following moocs courses for 2021-22 and 2022-23 admitted batches have been introduced, approved and recommended by DAC to BoS.

1. Self Driving cars
2. Energy Production, distribution & safety
3. Construction management
4. Graphic information system
5. Leading Sustainable community transformation
6. Digital Marketing
7. Ecology and Environment
8. French
9. German
10. Basics of marketing for Engineers
11. Japanese

Agenda Item-VI

To consider and approve the courses offered in 2023-2024 even semester for the batches of Y20, Y21, and Y22.	Approved
--	----------

Resolution: The following courses offered in Academic Year 2023-2024 even semesters for the batches of Y20, Y21, and Y22 has been approved by DAC and recommended to BoS. Course Structure has been furnished in **Annexure-VI**.


Professor in charge Academics


Head of the Department

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001:2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36 38, Museum Road, Government, Vijayawada - 520 002 Ph: +91 - 866 - 3500122 2577715, 2576129

The following members have attended the XXXIV DAC meeting which was held on

11 /11/2023 at C501 from 03:30 pm to 05:00 pm.

S.NO.	FULL NAME	DESIGNATION	ORGANIZATION	POSITION IN THE MEETING	SIGNATURE
1	Dr.K Srinivasulu	Professor-HoD	K L E F	Chairman	
2	Dr.B J K Singh	Professor-Dean R&D	K L E F	Internal Member	
3	Dr.B V L S Prasad	Professor	K L E F	Internal Member	
4	Dr.M Janaki Ramaiah	Professor	K L E F	Internal Member	
5	Dr.V Praveen Kumar	Assoc. Professor-Deputy HoD	K L E F	Secretary	
6	Dr.Nadeem Siddiqui	Assoc. Professor	K L E F	Internal Member	
7	Dr.Ashish Runthala	Assoc. Professor	K L E F	Invited Member	
8	Dr.Bandaru Srinivas	Assoc. Professor	K L E F	Invited Member	
9	Dr.Mallu Maheswara Reddy	Asst. Professor	K L E F	Internal Member	
10	Dr.Golamari Siva Reddy	Asst. Professor	K L E F	Internal Member	
11	Dr.Pinamaneni Rajasekhar	Asst. Professor	K L E F	Internal Member	
12	Dr.Chanda Chandrasekhar	Asst. Professor	K L E F	Internal Member	
13	Dr.Yella Venkata Rajesh	Asst. Professor	K L E F	Internal Member	
14	Dr.Sarada Prasanna Mallick	Asst. Professor	K L E F	Invited Member	
15	Dr.Gujjula Koteswara Reddy	Asst. Professor	K L E F	Invited Member	

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129

16	Dr.Pritam Kumar Dikshit	Asst. Professor	K L E F	Invited Member	<i>Pritam</i>
17	Dr.B Navyatha	Asst. Professor	K L E F	Invited Member	<i>Navya</i>
18	Dr. R Gnana Sekaran	Asst. Professor	K L E F	Invited Member	<i>R. Gnana</i>
19	Ms.Bandi Lekhana	IVth Year Student	K L E F	Invited Member	<i>Lekhana</i>
20	Ms. Aarya Harshal Suryawanshi	IVth Year Student	K L E F	Invited Member	<i>Aarya</i>
21	Mr.T Praveen	IIIrd Year Student	K L E F	Invited Member	<i>Praveen</i>
22	Mr.Allam Sai Sree Thanay	IIIrd Year Student	K L E F	Invited Member	<i>Thanay</i>
23	Ms.Nandyala Mythri	IIInd Year Student	K L E F	Invited Member	<i>Mythri</i>
24	Mr.Kavali Sarath	IIInd Year Student	K L E F	Invited Member	<i>Sarath</i>

[Signature]
Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Alumni	Miss. Vyshnavi Davulri, South Carolina, USA, Suggested to include concepts of aseptic process simulations and handling procedures	As per the suggestions of alumni, aseptic process simulations and handling procedures were added and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Bhavana Poladi, NIH, USA, suggested to add classification of MO's handling techniques (BSL-1, 2, 3, 4 etc)	Classification of Bio safety levels (1-4) were incorporated as handling of microbes based on the suggestions approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Tatineni Jahnavi, Harvard, USA, recommended to include safety procedures to be followed in handling of MO's (Bacteria, Yeast and Virus) and animal models	As per the recommendation, safety procedures while handling Microbes were incorporated as per the suggestions approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Vyshnavi Reddy, Dana-Faber cancer research center, USA, advised to introduce or increase the duration of foreign internship for at least 6 months for M.Tech students	As per the advice, internship period was increased to 1 yr for both UG and PG students approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302. Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klof.ac.in; www.klof.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Alumni	Mr. Hemanth Pula, USA, Suggested to increase the Participation of UG and PG students in international conferences	Students will be given with more opportunities to attend international conferences so as to gain exposure and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Mr. Yashwanth Gouda, AZT Biotech park, Vizag, Andhra Pradesh, Advised to increase the number of Industrial visits and industry exposure for B.Tech and M.Tech students on regular basis	As per the suggestions, number of industrial visits have been increased to 2 from 1 per year for UG and PG and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Ankita Kunta, USA, Advised to increase the number of reference books in the library should be increased for core courses	Reference books in the library were increased for students approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Neeha Sultana, Bangalore, India, Suggested to incorporate advanced topics of vaccine development should in Industrial Biotechnology specialization	As per the suggestions received, advances in vaccine production has been added to Industrial Biotechnology and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Alumni	Mr. Uduta Hasha, USA, Recommended to mandate at least 2 international certificate courses for UG students	For UG students, 3 certificate courses have been mandated as per the comments approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss.Sindhu Mulpuri, USA, Advised to add few topics related to CRSIPR-Cas9, recombinant proteins as therapeutics and MABs in UG curriculum	As per the suggestions, topics such as CRSIPR-Cas9, recombinant proteins as therapeutics and MABs were added in UG syllabus approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Braja Kishori Panigrahi, Oxford University, USA, Advised to increase the number of guest lecturers in the areas of Recombinant protein production, vaccine development strategies etc	Number of guest lectures will be improved as per the comments received from alumni the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Mr. Sudhanshu Sekhar, Vizag, USA, Suggested to involve and make use of industry persons even in specialization courses	As per the advice, utilization of industry persons were enhanced in the form of organizing guest lectures approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)


Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Alumni	Miss. Pavitra Etukuri Challagulla, North Carolina, USA, In Industrial Biotechnology specialization, advances in vaccine production process (Covid-19 vaccine) to be included	As per the suggestions received, advances in vaccine production has been added to the course and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Mr. Nikhil Reddy, Maryland, USA, Suggested to enrich information about cGMP procedures followed in industries	cGMP procedures were incorporated in Industrial specialization courses as per the suggestions from Alumni and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Mr. Divyanshu Dhakate, Ottawa, Canada, Include certain topics such as Quality assurance and regulatory guidelines followed in industries	As per the comments, industry oriented topics such as QA and regulatory guidelines were added and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Kamujula Vandana, Ottawa, Canada, Suggested to include Genomics data science and clustering course for 2023-2024 admitted batch.	Courses are floated under skilling for engineers categorization approved by BoS and eventually recommended to Academic Council.	B.Tech	2023-2024	Biotechnology	14/11/2023


Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESARAM, C.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klof.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Annexure-IV: Feedback from Various stake holders

Stakeholder Category	Stakeholder Feedback / Recommendation	Action Taken in BOS	Name of the Programme	Academic Year	Department	Date of BOS
Industry Personnel	Dr. Rajendra Kumar Palakurthy, AGM, Hetero Biopharma, Hyderabad, Telangana, Recommended to Medical Lab Technology and Analytical & Optical instrumentation courses for 2023-2024 admitted batch.	Courses are floated under skilling for engineers categorization approved by BoS and eventually recommended to Academic Council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Industry Personnel	Dr. Indrani, Research Head, Unique Biotech Pvt.ltd, Hyderabad, Telangana, Recommended to Process Engineering Tools course for 2023-2024 admitted batch.	Courses are floated under skilling for engineers categorization approved by BoS and eventually recommended to Academic Council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Industry Personnel	Dr. Rajesh, Scientist E, Sanofi Biotech, Medchal, Telangana, Suggested to change Syllabus as per the requirements of an industry. However, much focus should be given on documentation too.	As per the suggestions of Industry peer, techniques in documentation were added in Term paper & Social internship and the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head

Department of Biotechnology

Koneru Lakshmaiah Education Foundation

(Deemed to be University)

VADDESARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Industry Personnel	Dr. Alok Kumar, Sanofi Biotech, Medchal, Telangana, Recommended to Bioinstrumentation course for 2023-2024 admitted batch.	Courses are floated under skilling for engineers categorization approved by BoS and eventually recommended to Academic Council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Industry Personnel	Dr. Easwaran, Biocon Research Academy, Bangalor , Suggested to include skill based experiments in curriculum.	As per the comments, skill based experiments were added in PEP, Immunology, DSP & PABT and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Industry Personnel	Dr. Ramgopal, Biocon Research Academy, Bangalore, Suggested to include computer aided drug design course for 2023-2024 admitted batch.	Courses are floated under skilling for engineers categorization approved by BoS and eventually recommended to Academic Council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Rishitha Challagulla, North Carolina, USA, In the course entitled Pharmaceutical biotechnology, suggested to include production and purification of biopharmaceuticals such as vaccine and therapeutic products	Production and purification of biopharma and therapeutic products were added as per the suggestions in Pharmaceutical Biotechnology course approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category - 1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Govenorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Students	Miss. Pushpa Suggested to design the course in such as way that internships can be easily grabbed	As per the suggestions received, the courses have been modified as per the requirement of internships the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Mr. Srinivas BandiAdvised to increase the number of industry for placements	Number of industries were increased so as to place more students in industrial sector and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Miss. Suhana KousarSuggested to provide projects in CSIR labs for M.Tech students	Students have been encouraged to carry out their projects in CSIR labs as per the suggestions received and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Miss. Afeefah Farheen, Advised to provide opportunities for more fellowships or fellowships in reputed companies	Opportunity to explore Number of Fellowships in various companies have been encouraged for 3rd and 4th year student projects	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Mr. Suresh Kancham, Suggested to include job related courses for M.Tech	M.Tech course has been modified as per the suggestions received so as to meet industrial requirements the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ✦ Approved by AICTE ✦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129.

Students	Mr. Naveen poturi, Advised to introduce labs for specialization courses	As per the suggestion, labs have been incorporated for specialization courses the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Miss. Rachel Kocherla, Suggested to increase the interactions with industry and alumni	As per the recommendation, industrial experts and alumni meeting have been planned for discussions and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Miss. Sunandini Vedigandla, Advised to include topics such as Aquaculture, horticulture and Fish breeding	As per the suggestion, topics like Aquaculture, horticulture and Fish breeding were added in courses related to Agriculture specialization approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Mr. Hussain Shaikh, Suggested to provide more number of text books and involve students in research from the initial stages itself	Number of text books have been increased and students were encouraged to initiate their research from the moment they enter into the department by selecting certain faculty as their mentors and the same was	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302. Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200: www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

		approved by BoS and recommended to Academic council.				
Students	Mr. Narsimha Rao, Advised to increase the number of technical workshops for B.Tech students	As per the suggestions, number of technical workshops have been increased for UG and PG students	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Mr. Pavan Kalyan Suggested to appoint a faculty for guiding them to select a particular specialization to avoid any confusion among students	Orientation lectures have been planned for the students in their 3rd Year so as they get benefit and clarify their doubts regarding selection of specialization and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mr. Chandraseskhr Suggested to encourage students in participating various international conferences	As per the suggestion received from the parents, Students will be given with more opportunities to attend international conferences so as to gain exposure approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129.

Alumni	Mr. Pradyumna Irugavarapu, Cancer research Institute, USA, Advised to include Plant biotechnology along with the existing 4 specialization courses for B.Tech students where as introduction of IPR, bio safety and Bioethics courses for M.Tech students	As per the suggestions, along with the existing specialization courses, Plant Biotechnology has been added approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Alumni	Miss. Eliabeth, Canada, Suggested to include lab component for the course namely Process Engineering Principles	Lab component for the subject entitled Process Engineering Principles was added as per the comments the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Miss. Bhavana, Suggested to introduce team based activities and outdoor visits to industries	Team based activities such as Term paper, project expo and number of industrial visits have been incorporated as per the suggestions of current students exist in our department the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Students	Mr. Salman Khan, Advised to increase Industrial visits for B.Tech students	Industrial visits have been improved for UG students from 1 to 2 per year the same were approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESARAM, Guntur Dt



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 2500122, 2577715, 2576129.

Parents	Mr. Subhash pal Advised to allow students to go for more industrial exposure	Number of industrial visits have been increased for the students as per the suggestions received from parents approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mrs. Sukanya Vemuri Recommended to increase foreign internships for UG students as well	As per the recommendation, number of foreign internships for UG students have been increased approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mrs. Fareeha shaikhSuggested to introduce clubs for study and research	Various clubs for study and research have been added to give proper guidance to the students approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mr.Jonnalgadda Vinay Advised to provide text books for students so as to reduce the stress on eyes while preparing for the exams	Number of text books have been increased and students were encouraged to update their knowledge approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129

Parents	Mr. Umesh Raj Suggested to conduct more workshops and allow students for more industrial or field visits	Number of industrial visits have been increased for the students as per the suggestions received from parents approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mrs. Siddiqua Begum Suggested to counsel the students on regular basis and should be monitored	Counselling has been made a mandate for every faculty and it will be monitored to observe the overall progress of the student approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Parents	Mr. Saleem Khan Advised to introduce awareness among students in selecting the specialization courses	Orientation lectures have been planned for the students in their 2nd and 3rd Year so as they get benefit and get clarifications from the concerned faculty members approved by BoS and eventually recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head

Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddoswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129.

Academic Peer	Dr. Urmila Saxena, NIT Warangal, Suggested to include more skill based experiments in practical component.	Increased the number of experiments in skilling related courses and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Academic Peer	Dr. Krishna Pramanik, NIT Rourkela, Increase the number of industrial visits and to add production cycles of amino acids and alcohols in Microbial Technology	Suggested topics were added and number of industrial visits will be increased from 2 to 4 and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023
Academic Peer	Dr. Sarda Prasanna, Suggested to include New skilling courses in 2023-2024 admitted batch.	Medical Laboratory Technology and Process Engineering Tools skilling courses has been floated from Y23 batch and the same was approved by BoS and recommended to Academic council.	B.Tech	2023-2024	Biotechnology	14/11/2023

Head

Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klof.ac.in; www.klof.edu.in; www.kluniversity.in

Admin Off: 29-35-38, Museum Road, Governorpet, Vijayawada - 520 002, Ph: +91 - 866 - 3500122, 2577715, 2576129

Annexure-V: New Courses Syllabus

MEDICAL LAB TECHNOLOGY (MLT)

COURSE CODE	23SDBT01R	MODE	R	LTPS	0-0-2-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes


CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply haematology techniques to estimate various cells in blood	3	PO1,PSO1
CO2	Analyse various biological fluids using clinical biochemistry techniques	3	PO2,PSO2
CO3	Estimate biomolecules in biological fluids (Blood&Urine)	3	PO3,PO5,PSO1

Syllabus

Module 1	Isolation of serum and Plasma from Human Blood, Estimation of total RBC and WBC in human blood, Estimation of total platelets and esionophils in human blood
Module 2	Estimation of erythrocyte sedimentation rate, clotting and bleeding time in human blood, Preparation of Blood to identify the size and shape of RBC in healthy and diseased humans, Qualitative to identify Blood pathogens
Module 3	Haemoglobin Estimation – Sahali's Method and automated CBC count, Estimation of Blood sugar / glucose, urea and protein, Estimation of serum cholesterol, HDL an creatinine

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Introduction, Haematology and Coagulation, Immunohaematology	Kanai, L Mukherjee and Swarajit Ghosh	Mc Graw Hill Publication	2000
2	Introduction, Haematology and Coagulation, Immunohaematology	Kanai, L Mukherjee and Swarajit Ghosh	Mc Graw Hill Publication	2003
3	Biochemistry	Lubert Stryer	Worth Publishers Inc.,	1999


Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWARAM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200. www.klef.ac.in: www.klef.edu.in: www.kluniversity.in

Admin Off: 29-36-36, Museum Road, Governorpet, Vijayawada - 520 002 Ph +91 - 866 - 3500122 2577715, 2576129

4	Biochemistry	Donald Voet, Judith G. Voet	John Wiley & Sons,	2001
5	Lehninger Principles of Biochemistry	David L. Nelson, Michael Cox	Macmillan Learning International Edition	2005

MEDICAL LAB TECHNOLOGY (MLT)

COURSE CODE	23SDBT01A	MODE	A	LTPS	0-0-6-4	PRE- REQUISITE	NIL
----------------	-----------	------	---	------	---------	-------------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply haematology techniques to estimate various cells in blood	3	PO1,PSO1
CO2	Analyse various biological fluids using clinical biochemistry techniques	3	PO2,PSO2
CO3	Estimate biomolecules in biological fluids (Blood&Urine) and Estimate various enzymes and biomarkers to extrapolate the function of liver	3	PO3,PO5,PSO1

Syllabus

Module 1	Isolation of serum and Plasma from Human Blood, Estimation of total RBC and WBC in human blood, Estimation of total platelets and esionophils in human blood
Module 2	Estimation of erythrocyte sedimentation rate, clotting and bleeding time in human blood, Preparation of Blood to identify the size and shape of RBC in healthy and diseased humans, Qualitative to identify Blood pathogens
Module 3	Haemoglobin Estimation – Sahali's Method and automated CBC count, Estimation of Blood sugar / glucose, urea and protein, Estimation of serum cholesterol, HDL an creatinine. Estimation of serum Transaminases (SGOT & PT), Bilirubin, Estimation of Urine sugar / glucose, urea and protein, Estimation of Ketone bodies in urine

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Introduction, Haematology and Coagulation, Immunohaematology	Kanai, L Mukherjee and Swarajit Ghosh	Mc Graw Hill Publication	2000

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302 Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200. www.klof.ac.in; www.klof.edu.in; www.kluuniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129

2	Introduction, Haematology and Coagulation, Immunohaematology	Kanai, L Mukherjee and Swarajit Ghosh	Mc Graw Hill Publication	2003
3	Biochemistry	Lubert Stryer	Worth Publishers Inc.,	1999
4	Biochemistry	Donald Voet, Judith G. Voet	John Wiley & Sons,	2001
5	Lehninger Principles of Biochemistry	David L. Nelson, Michael Cox	Macmillan Learning International Edition	2005

ANALYTICAL AND OPTICAL INSTRUMENTATION (AOD)

COURSE CODE	23SDBT02R	MODE	R	LTPS	0-0-2-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Analyze the working of absorption spectrometers	4	PO1, PO2, PSO1
CO2	Analyze the working of Infra Red spectrometers	4	PO1, PSO1
CO3	Analyze the working of chromatograph	4	PO1, PO2, PSO1

Syllabus

Module 1	U.V and Visible photometers – Electromagnetic spectrum – types of spectrum - Absorption spectrometers -fundamental laws of absorption photometry – components of photometer - filter photometer – single beam and double beam -spectrophotometers – single beam and double beam - I.R. spectrophotometers
Module 2	Emission Spectrometers - flame photometer - Mass spectrophotometer– construction and working – Magnetic deflection mass spectrometer -Time of flight mass spectrometer – Nuclear Magnetic Resonance spectrometer– Raman effect -Raman spectrophotometer.
Module 3	pH Measurement - Introduction – Sorensen's scale – Buffer solution – electrodes for pH measurements, measuring electrodes-Hydrogen electrode, glass electrode, errors and its compensation in glass electrode- calomel electrode-combined pH electrode -Industrial electrode assemblies-DIP and Flow type Digital pH meter- pH control in effluent treatment-

[Signature] Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200. www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-39, Museum Road, Governorpet, Vijayawada - 520 002 Ph. +91 - 866 - 3500122, 2577715, 2576129

Chromatography -Classification - Gas chromatography-Liquid chromatography-Paper chromatography

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Instrumental methods of analysis-	Willard, Dean Merrit & Settle ,	CBS publishers	2000
2	Handbook of Analytical Instruments	R.S.Khandpur	TMH	2003
3	Instrumental methods of Chemical Analysis	Chatwal – Anand ,	Himalaya Publishing House	1999
4	Biochemistry	Donald Voet, Judith G. Voet	John Wiley & Sons,	2001
5	Lehninger Principles of Biochemistry	David L. Nelson, Michael Cox	Macmillan Learning International Edition	2005

ANALYTICAL AND OPTICAL INSTRUMENTATION (AOI)


COURSE CODE	23SDBT02A	MODE	A	LTPS	0-0-6-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Analyze the working of absorption spectrometers	4	PO1, PO2, PSO1
CO2	Analyze the working of Infra Red spectrometers	4	PO1, PSO1
CO3	Analyze the working of chromatograph and different analyzers	4	PO1, PO2, PSO1

Syllabus

Module 1	U.V and Visible photometers – Electromagnetic spectrum – types of spectrum - Absorption spectrometers -fundamental laws of absorption photometry – components of photometer - filter photometer – single beam and double beam -spectrophotometers – single beam and double beam - I.R. spectrophotometers
Module 2	Emission Spectrometers - flame photometer - Mass spectrophotometer– construction and working – Magnetic deflection mass spectrometer -Time of flight mass spectrometer –Nuclear Magnetic Resonance spectrometer– Raman effect -Raman spectrophotometer.


 Head
 Department of Biotechnology
 Koneru Lakshmaiah Education Foundation
 (Deemed to be University)
 VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ✦ Approved by AICTE ✦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200 www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-39, Museum Road, Governorpet, Vijayawada - 520 002 Ph: +91 - 866 - 3500122, 2577715, 2576129

Module 3

pH Measurement - Introduction – Sorensen's scale – Buffer solution – electrodes for pH measurements, measuring electrodes-Hydrogen electrode, glass electrode, errors and its compensation in glass electrode- calomel electrode-combined pH electrode -Industrial electrode assemblies-DIP and Flow type Digital pH meter- pH control in effluent treatment-Chromatography -Classification - Gas chromatography-Liquid chromatography-Paper chromatography , Industrial Analyzers -Thermal conductivity gas analyzer— Paramagnetic oxygen analyzer – magnetic force type and wind type - Zirconia oxygen analyzer - Infrared analyzers – positive and negative filter type IR analyzer- Electrical conductivity

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Instrumental methods of analysis-	Willard, Dean Merrit & Settle ,	CBS publishers	2000
2	Handbook of Analytical Instruments	R.S.Khandpur	TMH	2003
3	Instrumental methods of Chemical Analysis	Chatwal – Anand ,	Himalaya Publishing House	1999
4	Biochemistry	Donald Voet, Judith G. Voet	John Wiley & Sons,	2001
5	Lehninger Principles of Biochemistry	David L. Nelson, Michael Cox	Macmillan Learning International Edition	2005

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200. www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-35-38, Museum Road, Government, Vijayawada - 520 002 Ph +91 - 866 - 3500122, 2577715, 2576129

BIOINSTRUMENTATION (BIN)

COURSE CODE	23SDBT03R	MODE	R	LTPS	0-0-2-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply various Techniques for characterization of Biomolecules	3	PO1,PO2,PSO2
CO2	Apply method for analysis of biological compounds	3	PO1,PO2,PSO2
CO3	Analyze various impurities in biological compounds	3	PO1,PO2,PSO2

Syllabus

Module 1	Protein profiling by western blot analysis, Gene expression studies by qPCR
Module 2	Analyzing gels by Gel doc and Image J, Cell imaging by Fluorescent Inverted Microscope
Module 3	Cell sorting and count by flow cytometry, Isolation of natural products by preparative HPLC,

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Spectrophotometric identification of organic compounds	Basseter GC, Silverstein RM.	Wiley	1992
2	Advanced instrumentation, data interpretation, and control of biotechnological processes	Van Impe JF, Vanrolleghem PA, Iserentant DM,	Springer Science & Business Media	2016
3	Bioinstrumentation	John Denis Enderle	Morgan & Claypool Publishers	1989
4	Bioinstrumentation	John G. Webster	John Wiley & Sons	2003
5	Introduction to Biochemical Engineering	D G Rao	Mc Graw Hill	1999

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
Vaddeswaram, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302 Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200. www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-35-36 Museum Road, Goversorpet, Vijayawada - 520 002 Ph +91 - 866 - 3500122, 2577715, 2576129

BIOINSTRUMENTATION (BIN)

COURSE CODE	23SDBT03A	MODE	A	LTPS	0-0-6-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes


CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply various Techniques for characterization of Biomolecules	3	PO1,PO2,PSO2
CO2	Apply method for analysis of biological compounds	3	PO1,PO2,PSO2
CO3	Analyze various impurities in biological compounds and Compare methods for characterization of biological molecules	3	PO1,PO2,PSO2

Syllabus

Module 1	Protein profiling by western blot analysis, Gene expression studies by qPCR
Module 2	Analyzing gels by Gel doc and Image J, Cell imaging by Fluorescent Inverted Microscope
Module 3	Cell sorting and count by flow cytometry, Isolation of natural products by preparative HPLC, Gas chromatography, FTIR, GC-MS, Electrophoresis, Filtration, Dialysis, Osmosis, Reverse osmosis

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Spectrophotometric identification of organic compounds	Basseter GC, Silverstein RM.	Wiley	1992
2	Advanced instrumentation, data interpretation, and control of biotechnological processes	Van Impe JF, Vanrolleghem PA, Iserentant DM,	Springer Science & Business Media	2016
3	Bioinstrumentation	John Denis Enderle	Morgan & Claypool Publishers	1989
4	Bioinstrumentation	John G. Webster	John Wiley & Sons	2003


Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200, www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-36, Museum Road, Governorpet, Vijayawada - 520 002 Ph +91 - 866 - 3500122, 2577715, 2576129

PROCESS ENGINEERING TOOLS (PET)

COURSE CODE	23SDBT04R	MODE	R	LTPS	0-0-2-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply various Techniques for isolation of microbes from different sources	3	PO1,PO2,PSO2
CO2	Apply various biochemical methods for characterization of microorganism.	3	PO1,PO2,PSO2
CO3	Apply various biochemical kinetics for isolated microbes	3	PO1,PO2,PSO2

Syllabus

Module 1	Preparation of medium for bacterial culture, Isolation of microorganism from contaminated soil
Module 2	BIOCHEMICAL CHARACTERIZATION OF ISOLATED BACTERIA- Catalase test, Citrate test, Coagulase test, DNase TEST, Hippurate test, hydrogen Sulfide production, indole test, method of kovac's reagent, lecithinase test, mixed acid fermentation, oxidase test, potassium hydroxide test, urease test, voes-proskauer test
Module 3	MICROBIAL KINETICS -construction of growth curve and estimation of growth kinetic parameters and Monod constant from isolated bacterial culture

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Bioprocess Engineering	Michael L.Shuler Fikret Kargi	Pearson	2000
2	Introduction to Process calculations (Stoichiometry)	K.A Gavhane	Springer	1998
3	Process Calculations	Venkataramani, V., and Anantharaman,	Prentice Hall of India Limited	2003
4	Bioprocess Engineering Principles	Pauline M.Doran	ELSEVIER	1978
5	Introduction to Biochemical Engineering	D G Rao	Mc Graw Hill	1999

Head
Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA

Phone No. 08645 - 350200; www.klof.ac.in; www.klof.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002 Ph. #91 - 866 - 3500122 2577715, 2576129

PROCESS ENGINEERING TOOLS (PET)

COURSE CODE	23SDBT04A	MODE	A	LTPS	0-0-6-4	PRE-REQUISITE	NIL
-------------	-----------	------	---	------	---------	---------------	-----

Course Outcomes

CO#	CO Description	BTL	PO/PSO Mapping
CO1	Apply various Techniques for isolation of microbes from different sources	3	PO1,PO2,PSO2
CO2	Apply various biochemical methods for characterization of microorganism.	3	PO1,PO2,PSO2
CO3	Apply various biochemical kinetics and optimization techniques for isolated microbes	3	PO1,PO2,PSO2

Syllabus

Module 1	Preparation of medium for bacterial culture, Isolation of microorganism from contaminated soil
Module 2	BIOCHEMICAL CHARACTERIZATION OF ISOLATED BACTERIA- Catalase test, Citrate test, Coagulase test, DNase TEST, Hippurate test, hydrogen Sulfide production, indole test, method of kovac's reagent, lecithinase test, mixed acid fermentation, oxidase test, potassium hydroxide test, urease test, voes-proskauer test
Module 3	MICROBIAL KINETICS -construction of growth curve and estimation of growth kinetic parameters and Monod constant from isolated bacterial culture. OPTIMIZATION OF ISOLATED BACTERIAL CULTURE- Plackett – Burman and central composite design, STABILITY STUDIES OF ISOLATED BACTERIAL CULTURE- Temperature stability, pH stability and effect of substrate concentration.

Reference Books:

S.No	Title	Author(s)	Publisher	Year
1	Bioprocess Engineering	Michael L.Shuler Fikret Kargi	Pearson	2000
2	Introduction to Process calculations (Stoichiometry)	K.A Gavhane	Springer	1998
3	Process Calculations	Venkataramani, V., and Anantharaman,	Prentice Hall of India Limited	2003
4	Bioprocess Engineering Principles	Pauline M.Doran	ELSEVIER	1978

Head

Department of Biotechnology
Koneru Lakshmaiah Education Foundation
(Deemed to be University)
VADDESWAREM, Guntur Dt.