VIGNAN'S
Foundation for Science, Technology & Research
UNIVERSITY
(Estd u/s 3 of UGC Act of 1956)

DEPARTMENT OF BIOTECHNOLOGY

Date: 18.05.2013.

Minutes of Board of Studies (BOS) meeting of B.Tech Biotechnology program held on 18-05-2013 at office Head of the department, Department of Biotechnology, Vignan's University, Vadlamudi.

Agenda of the meeting:

1. To discuss and finalize structure and detailed syllabus for B.Tech Biotechnology program applicable from 2013-14 admitted batch

Members present:

S.No	Name	Members	Signature
1.	Prof. R Venkata. Nadh, HOD Department of Biotechnology	Chairman, BOS	R. V. Nadh
2.	Prof. Sathyanarayana N Gummadi, IIT, Madras	Invited member	G. Sathyanaid
3.	Dr. P. Srinivasa Rao, NIT, Warangal	Invited member	
4.	Dr. V. Ravi Kumar, Professor, VFSTR	Internal Member	
5.	Dr.S.Krupanidhi, Professor,	Internal Member	
6.	Mrs. Indira, Assistant Professor	Internal Member	
7.	Mr.D.John Babu, Assistant Professor	Internal Member	

Minutes of the BOS meeting

1. The chairman welcomed all the members of BOS.
2. The chairman highlighted broad objectives of the proposed changes in the course structure of B.Tech Biotechnology.
3. The chairmen also explained in detail the suggestions and comments communicated various stakeholders.
4. The members of the BOS thoroughly looked at the proposals of Department of Biotechnology in the light of suggestions made by experts and recommended a new course structure for B.Tech Biotechnology program.

After the discussion it is resolved to:

1. Propose and approve course structure for all 4 years of B.Tech. Programme in Biotechnology (Appendex-I).
2. Propose and approve detailed syllabus for the 4 year of B.Tech. Programme in Biotechnology with effect from the academic year 2013-14. The proposed structure and syllabus are applicable for 2014 admitted batch onwards.
3. Stakeholder's feedback is collected, analyzed and given utmost priority while designing the curriculum and their suggestions are implemented
4. The curriculum follows choice-based credit system
5. Major restructuring has taken place in the curriculum by introducing minor specializations such as Management, Humanities & Science, Information Technology and Electronics and Communication Engineering
6. Major restructuring has taken place in the curriculum by introducing new electives such as Stem Cell Biology, Animal Cell Science Technology, Plant Physiology, Biophysics etc.
7. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development (Appendix II)
8. In the B.Tech. Biotechnology revised regulation R13, the substantial changes are made in the content of all courses and hence the courses are considered as new courses (Appendix III)

APPENDIX – I

Course Structure

I Year I Semester

Subject	L	T	P	To	C
Mathematics for Biotechnologists-I	4	-	-	4	4
Engineering Physics	4	-	-	4	4
Engineering Mechanics	4	-	-	4	4
Technical English Communication	5	-	-	5	5
Problem Solving & Computer Programming	5	-	-	5	5
Network Security	2	-	-	2	-
Practical Course:					
Computer Programming Lab	-	-	3	3	2
Workshop Practice	-	-	3	3	2
Engineering Physics Lab	-	-	3	3	2
	24	-	**9**	**33**	28

I Year II Semester

Subject	L	T	P	To	C
Mathematics for Biotechnologists-II	4	-	-	4	4
Environmental Studies	3	-	-	3	3
Fundamental of Electrical Engineering	4	-	-	4	4
Engineering Chemistry	4	-	-	4	4
Elements of Biology & Biotechnology	4	-	-	4	4
Professional Ethics Values & Human Rights	2	-	-	2	-
Practical Course :					
Engineering Chemistry Lab	-	-	3	3	2
Engineering Graphics	1	-	3	4	3
Fundamental of Electrical Engg. Lab	-	-	3	3	2
TOTAL	**22**	-	**9**	**31**	26

II Year I Semester

Subject	L	T	P	To	C
Microbiology	4	-	-	4	4
Biochemistry	4	-	-	4	4
Cell Biology	4	-	-	4	4
Process Engineering Principles	4	-	-	4	4
Probability & Statistics	4	-	-	4	4
Seminar	-	-	1	1	1
Minor - I	4	-	-	4	4
Practical Course :					
Microbiology Lab	-	-	3	3	2
Biochemistry Lab	-	-	3	3	2
Soft Skills Lab	-	-	3	3	2
TOTAL	**24**	-	**10**	**34**	**31**

II Year II Semester

Subject	L	T	P	To	C
Data Structures	4	-	-	4	4
Genetics	4	-	-	4	4
Industrial Biotechnology	4	-	-	4	4
Heat & Mass Transfer	4	-	-	4	4
Instrumental Methods of Analysis	4	-	-	4	4
Seminar		-	1	1	1
Minor - II	4	-	-	4	4
Practical Course :					
Instrumental Methods of Analysis Lab	-	-	3	3	2
Heat Mass & Momentum Transfer Lab	-	-	3	3	2
Professional Communication Lab	1	-	2	3 2	
TOTAL	**25**	-	**9**	**34**	31

III Year I Semester

Subject	L	T	P	To	C
Molecular Biology	4	-	-	4	4
Biochemical Reaction Engineering	4	-	-	4	4
Genetic Engineering	4	-	-	4	4
Managerial Economics	4	-	-	4	4
Plant Biotechnology **(Elective-I)**	4	-	-	4	4
Plant Metabolism **(Elective-I)**					
Plant Physiology **(Elective-I)**					
Minor - III	4	-	-	4	4
Seminar		-	1	1	1
Practical Course :					
Biochemical Reaction Engineering Lab	-	-	3	3	2
Cell & Tissue Culture Lab	-	-	3	3	2
Biological Database Lab	-	-	3	3	2
TOTAL	**24**	-	**10**	**34**	**31**

III Year II Semester

Subject	L	T	P	To	C
Thermodynamics for Biotechnologists	4	-	-	4	4
Bioprocess Engineering	4	-	-	4	4
Enzyme Technology	4	-	-	4	4
Bioethics, Safety & IPR	4	-	-	4	4
Animal Biotechnology **(Elective-II)**	4	-	-	4	4
Stem Cell Biology **(Elective-II)**		-	-	-	-
Animal Cell Science Technology **(Elective-II)**		-	-	-	-
Minor - IV	4	-	-	4	4
Seminar		-	1	1	1
Practical Course:					
Molecular Biology & Genetic Engg. Lab	-	-	3	3	2
Bioprocess Engineering Lab	-	-	3	3	2
Mini Project		3	3	2	2
	24	**3**	**10**	**33**	**31**

IV Year I Semester

Subject	L	T	P	To	C

Bioinformatics	4	-	-	4	4
Immunology	4	-	-	4	4
Down Stream Processing	4	-	-	4	4
Elective - III	**4**	**-**	**-**	**4**	**4**
Biophysics					
Biosensors & Bioelectronics					
Nano Biotechnology					
Environmental Biotechnology					
Elective - IV	4	-	-	4	4
Biopharmaceutical Technology					
Cancer Biology					
Fermentation Technology					
Minor - V	4	-	-	4	4
Practical Course:					
Immunology Lab	-	-	3	3	2
Down Stream Processing Lab	-	-	3	3	2
Bioinformatics Lab	-	-	3	3	2
TOTAL	**24**	**-**	**9**	**33**	**30**

IV Year II Semester

Subject	L	T	P	To	C
Minor - V	**4**	**-**	**-**	**4**	**4**
Elective - V	4	-	-	4	4
Regulatory Affairs & Clinical Trails					
Proteomics and Genomics					
Industrial Process Control					
Elective - VI	4	-	-	4	4
Computational Molecular Biology					
Biostatastics					
Plant Design and Economics					
Project work	-	-	20	20	10
	12	**-**	**20**	**32**	**22**

II Semester

Subject	L	T	P	To	C
Internship (6 months)	-	-	36	36	18
	-	-	**36**	**36**	**18**

The courses that are highlighted denote implementation of 'Choice Based Credit System (CBCS)'

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APPENDIX - II

List of courses that enable employability or entrepreneurship or skill development in the R-13 B.Tech – Biotechnology

S.No	Year	Course Name	Employability/ Entrepreneurship/ Skill development
1.	I	Elements of Biology and Biotechnology	Skill development
2.	II	Microbiology lab	Skill development
3.	II	Biochemistry lab	Skill development
4.	II	Genetics	Skill development
5.	II	Microbiology	Skill development
6.	II	Industrial biotechnology	Skill development
7.	II	Biochemistry	Skill development
8.	II	Heat & mass transfer	Skill development
9.	II	Cell biology	Skill development
10.	II	Instrumental methods of analysis	Employability
11.	II	Process engineering principles	Skill development
12.	II	Instrumental methods of analysis lab	Employability
13.	II	Heat mass & momentum transfer lab	Skill development
14.	III	Molecular Biology	Employability
15.	III	Animal Biotechnology	Skill development
16.	III	Biochemical Reaction Engineering	Employability
17.	III	Thermodynamics for Biotechnologists	Skill development
18.	III	Genetic Engineering	Skill development
19.	III	Bioprocess Engineering	Skill development
20.	III	Plant Biotechnology	Skill development
21.	III	Enzyme technology	Skill development
22.	III	Plant Metabolism	Skill development
23.	III	Bioethics Safety and IPR	Skill development
24.	III	Plant Physiology	Skill development
25.	III	Stem Cell Biology	Employability

S.No	Year	Course Name	Employability/ Entrepreneurship/ Skill development
26.	III	Biochemical Reaction Engineering Lab	Skill development
27.	III	Cell & Tissue culture	Skill development
28.	III	Animal Cell Science Technology	Skill development
29.	III	Biological Database Lab	Employability
30.	III	Molecular Biology & Genetic Engineering Lab	Employability
31.	III	Bioprocess Engineering Laboratory	Skill development
32.	III	Mini Project	Employability
33.	IV	Bioinformatics	Skill development
34.	IV	Regulatory Affairs & Clinical Trails	Skill development
35.	IV	Immunology	Skill development
36.	IV	Proteomics and Genomics	Skill development
37.	IV	Down Stream Processing	Skill development
38.	IV	Industrial Process Control	Skill development
39.	IV	Biophysics	Employability
40.	IV	Computational Molecular Biology	Skill development
41.	IV	Biosensors & Bioelectronics	Skill development
42.	IV	Biostatistics	Skill development
43.	IV	Nano Biotechnology	Skill development
44.	IV	Plant Design and Economics	Skill development
45.	IV	Environmental Biotechnology	Skill development
46.	IV	Project Work	Employability
47.	IV	Biopharmaceutical Technology	Employability
48.	IV	Internship	Employability
49.	IV	Cancer Biology	Skill development
50.	IV	Fermentation Technology	Skill development
51.	IV	Immunology Lab	Skill development
52.	IV	Down Stream Processing Lab	Skill development
53.	IV	Bioinformatics Lab	Skill development

R.V. Nadh

Chairman BoS

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APPENDIX - III

List of new courses in the R-13
B.Tech – Biotechnology Curriculum

S.No	Year	Course Name
1.	I	Elements of Biology and Biotechnology
2.	II	Microbiology lab
3.	II	Biochemistry lab
4.	II	Genetics
5.	II	Microbiology
6.	II	Industrial biotechnology
7.	II	Biochemistry
8.	II	Heat & mass transfer
9.	II	Cell biology
10.	II	Instrumental methods of analysis
11.	II	Process engineering principles
12.	II	Instrumental methods of analysis lab
13.	II	Heat mass & momentum transfer lab
14.	III	Molecular Biology
15.	III	Animal Biotechnology
16.	III	Biochemical Reaction Engineering
17.	III	Thermodynamics for Biotechnologists
18.	III	Genetic Engineering
19.	III	Bioprocess Engineering
20.	III	Plant Biotechnology
21.	III	Enzyme technology
22.	III	Plant Metabolism
23.	III	Bioethics Safety and IPR
24.	III	Plant Physiology
25.	III	Stem Cell Biology
26.	III	Biochemical Reaction Engineering Lab
27.	III	Cell & Tissue culture
28.	III	Animal Cell Science Technology
29.	III	Biological Database Lab
30.	III	Molecular Biology & Genetic Engineering Lab
31.	III	Bioprocess Engineering Laboratory
32.	III	Mini Project

S.No	Year	Course Name
33.	IV	Bioinformatics
34.	IV	Regulatory Affairs & Clinical Trails
35.	IV	Immunology
36.	IV	Proteomics and Genomics
37.	IV	Down Stream Processing
38.	IV	Industrial Process Control
39.	IV	Biophysics
40.	IV	Computational Molecular Biology
41.	IV	Biosensors & Bioelectronics
42.	IV	Biostatistics
43.	IV	Nano Biotechnology
44.	IV	Plant Design and Economics
45.	IV	Environmental Biotechnology
46.	IV	Project Work
47.	IV	Biopharmaceutical Technology
48.	IV	Internship
49.	IV	Cancer Biology
50.	IV	Fermentation Technology
51.	IV	Immunology Lab
52.	IV	Down Stream Processing Lab
53.	IV	Bioinformatics Lab

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