VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be University)
-Estd. u/s 3 of UGC Act 1956

DEPARTMENT OF BIOTECHNOLOGY

Date: 05.04.2019.

Minutes of Board of Studies (BOS) meeting of B.Tech Bioinformatics program held on 05-04-2019 at office Head of the department, Department of Biotechnology, VFSTR, Vadlamudi.

Agenda of the meeting:

1) To discuss and finalize structure and detailed syllabus for B.Tech Bioinformatics program applicable from 2019-20 admitted batch.

Members present:

S.No	Name	Members	Signature
1.	Prof. S. Krupanidhi, HOD Department of Biotechnology	Chairman, BOS	
2.	Prof. Mukesh Doble, IIT, Madras	Invited member	
3.	Prof. Sathyanarayana N Gummadi, IIT, Madras	Invited member	
4.	Dr.Vijayalakshmi Venkatesan, Scientist 'G' National Institute of Nutrition, Hydearbad	Invited member	
5.	Dr. Shyam Perugu, NIT, Warangal	Invited member	
6.	Dr.Narashimhan, Manager, ADVANTA Pvt Ltd, Hyderabad	-Invited member	
7.	Dr. D. Vijaya Ramu, Professor & Dean Academics	Internal Member	
8.	Dr.D.John Babu, Associate Professor	Internal Member	
9.	Dr.Abhinav Parasher, Assistant Professor	Internal Member	
10.	Dr.M.Indira, 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 Bioinformatics program.

3. The chairman also explained in detail the suggestions and comments received from various stakeholders.

4. The members of the BOS thoroughly looked at the proposals of the Department of Biotechnology in the light of suggestions made by experts and recommended a new course structure for B. Tech Bioinformatics program.

After the discussion it is resolved to:

1. Propose and approve course structure for all 4 years of B.Tech. Programme in Bioinformatics (Appendix - I).

2. Propose and approve detailed syllabus for the 4 year of B.Tech. Programme in Bioinformatics with effect from the academic year 2019-20. The proposed structure and syllabus are applicable for 2019 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 which is oriented towards project-based learning with the inclusion of Intradisciplinary, Inter-departmental, Societal centric and industry related projects

6. Major restructuring has taken place in the curriculum by introducing new and advanced courses in computing and informatics such as Bio Perl, Data Science, Python Programming, Internet of Things etc.

7. The total percentage of syllabus revision for B.Tech Bioinformatics Program is 57%.

8. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development (Appendix II)

9. In the B.Tech. Bioinformatics revised regulation R19, 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

Course Title	L	T	P	C
Engineering Mathematics I(B)	3	1	2	5
Engineering Physics I(C)	3	0	2	4
Basics of Electrical & Electronics Engineering	2	0	2	3
Engineering Graphics & Design	3	0	2	4
Programming for Problem Solving - I	3	0	4	5
Basics of Computer and Internet	3	1	0	4
Physical Fitness, Sports & Games-I	0	0	3	1
Total	**17**	**2**	**15**	**26**

I Year II Semester

Course Title	L	T	P	C
Engineering Mathematics II(B)	3	1	2	5
Organic Chemistry	3	0	2	4
Programming for Problem Solving – II	3	0	4	5
English Proficiency and Communication Skills	0	0	2	1
Technical English Communication	2	0	2	3
Constitution of India	1	0	0	1
Workshop	1	0	2	2
Physical Fitness, Sports & Games-2	0	0	3	1
Total	**13**	**1**	**17**	**22**

II Year I Semester

Course Title	L	T	P	C
Probability and Statistics	3	1	0	4
Unix Programming	3	0	0	3
Molecular Genetics	3	0	2	4
BioPerl	3	0	2	4
Data Structures	3	0	2	4
Management Science	3	0	0	3
Life Skills-I	0	0	2	-
Technical Seminar-I	0	0	4	1
Intra-Disciplinary Projects-I	0	0	3	1
Physical Fitness, Sports & Games-III	0	0	2	1
Total	18	1	17	25

II Year II Semester

Course Title	L	T	P	C
Biochemistry	3	0	2	4
OOPs through JAVA	2	0	4	4
Database Management Systems	3	0	2	4
Immunoinformatics	3	0	4	5
Environmental Science	1	0	0	1
Life Skills -II	0	0	2	1
Technical Seminar-II	0	0	2	1
Intra-Disciplinary Projects-II	0	0	2	1
Open Elective-I	3	0	0	3
Total	15	0	17	24

III Year I Semester

Course Title	L	T	P	C
Computational Biology	3	0	2	4
R Programming	3	0	2	4
Python Programming	3	0	2	4
Soft Skills Lab	1	0	0	1
Employability Skills-I	0	0	2	-
Inter-Departmental Projects-I	0	0	4	2
Modular Course	0	0	0	1
Department Elective-I	3	0	0	3
Open Elective-II	3	0	0	3
Total	16	0	12	22

III Year II Semester

Course Title	L	T	P	C
Data Science	3	0	2	4
Algorithms in Computational Biology	3	1	0	4
Professional Communications Lab	0	0	2	1
Human Values, Professional Ethics & Gender Equity	2	0	0	2
Employability Skills-II	0	0	2	1
Inter-Departmental Projects-II	0	0	4	2
Department Elective-II	3	0	0	3
Open Elective-III	3	0	0	3
Total	14	1	10	20

IV Year I Semester

Course Title	L	T	P	C
Web Technologies	2	0	2	3
Internet of Things	2	0	2	3
Structural Bioinformatics	3	0	2	4
Societal-Centric and Industry Related Project	0	0	6	3
Department Electives-III	3	0	0	3
Department Elective-IV	3	0	0	3
Total	**13**	**0**	**12**	**19**

IV Year II Semester

Course Title	L	T	P	C
Internship/Project work (Industry oriented projects)	-	-	24	12
Total	**-**	**-**	**24**	**12**

Department Electives

Course Title	L	T	P	C
Molecular Interactions	3	-	-	3
Metabolomics	3	-	-	3
Biological Database	2	-	2	3
Drug Design	2	-	2	3
Metabolic Pathways	3	-	-	3
Systems Biology	2	-	2	3
Neural Networks	3	-	-	3
Molecular Phylogenetics	2	-	2	3

Open Electives

Course Title	L	T	P	C
Community Informatics	3	-	-	3
Health Informatics	3	-	-	3
Software Tools for Sustainable Biodiversity	3	-	-	3

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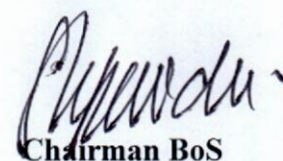(Deemed to be University)
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APPENDIX - II

List of courses that enable employability or entrepreneurship or skill development in the R-19 B.Tech – Bioinformatics

S.No	Semester (Year)	Core/Elective	Course Name	Employability/ Entrepreneurship/ Skill development
1.	Semester I (Second Year)	Professional Core	Unix Programming	Employability
2.	Semester I (Second Year)	Professional Core	Molecular Genetics	Skill development
3.	Semester I (Second Year)	Professional Core	Bio-PERL	Skill development
4.	Semester II (Second Year)	Professional Core	Biochemistry	Skill development
5.	Semester II (Second Year)	Professional Core	Immunology and Immunoinformatics	Skill development
6.	Semester I (Third Year)	Professional Core	Computational Biology	Skill development
7.	Semester II (Third Year)	Professional Core	Data Science	Employability
8.	Semester II (Third Year)	Professional Core	Algorithms in Bioinformatics	Employability
9.	Semester I (Fourth Year)	Professional Core	Structural Bioinformatics	Skill development
10.		Professional Elective	Systems Biology	Employability
11.		Professional Elective	Molecular Interactions	Employability
12.		Professional Elective	Neural Networks	Employability
13.		Professional Elective	Metabolomics	Employability
14.		Professional Elective	Molecular Phylogenetics	Employability
15.		Professional Elective	Drug Design	Employability

S.No	Semester (Year)	Core/Elective	Course Name	Employability/ Entrepreneurship/ Skill development
16.		Professional Elective	Metabolic Pathways	Employability
17.		Professional Elective	Biological Database	Employability
18.		Open Elective	Community Informatics	Employability
19.		Open Elective	Health Informatics	Employability
20.		Open Elective	Software Tools Sustainable Biodiversity	Employability

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APPENDIX – III

List of new courses in the R-19
B.Tech – Bioinformatics Curriculum

S.No	Semester (Year)	Course Name
1.	II/I	Unix Programming
2.	II/I	Molecular Genetics
3.	II/I	Bio-PERL
4.	II/I	Biochemistry
5.	II/II	Immunology and Immunoinformatics
6.	III/I	Computational Biology
7.	III/II	Data Science
8.	III/II	Algorithms in Bioinformatics
9.	IV/I	Structural Bioinformatics
10.	Elective	Systems Biology
11.	Elective	Molecular Interactions
12.	Elective	Neural Networks
13.	Elective	Metabolomics
14.	Elective	Molecular Phylogenetics
15.	Elective	Drug Design
16.	Elective	Metabolic Pathways
17.	Elective	Biological Database
18.	Elective	Community Informatics
19.	Elective	Health Informatics
20.	Elective	Software Tools Sustainable Biodiversity

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