



Date: 23.04.2021

## MINUTES OF MEETING OF THE BOARD OF STUDIES in B.Sc BIOCOMPUTING

The meeting of the Board of Studies in B.Sc Biocomputing (UG program) of the Department of Bioinformatics, School of Life Science, VISTAS held on 23.04.2021 at 11.30 am in Bioinformatics Lab to discuss the revision of UG Program Curriculum & Syllabus of B.Sc Biocomputing.

### I. Members Present:

S.No	Name with Designation	Role
1.	Dr. Radha Mahendran, Professor & Head, Department of Bioinformatics, VISTAS, Chennai	Chairman
2.	Dr.J. Suganya Assistant Professor, Department of / Bioinformatics, VISTAS, Chennai	Internal Member
3.	Dr.M.N Ponnusamy, Emeritus Professor, Dept of Crystallography and Biophysics, University of Madras, Guindy, Chennai	Academic Expert
4.	Dr.J.Senthil Kumar, Assistant Professor, Dept of Computer Science, Loganatha Narayanasamy Government College (Autonomous), Ponneri Chennai.	Academic Expert
5.	Dr.M.Menaga, Managing Director, BioNeem Tech, Sipcot IT park, Siruseri Chennai	Industrial Expert
6.	Mr. Aganl Vincent Paul	Alumni
7.	Ms. Kanmani.R	Alumni
8.	Ms. Abinaya Gayathri E	Student

## **II. Objective of the Revision:**

- To develop the curriculum based on Learning Outcome based Curriculum Framework (LOCF)
- To consider present trend in the respective fields and industry relevant interdisciplinary courses.
- To implement the guidelines and suggestions of the new education policy while preparing the curriculum.
- To eliminate the obsolete syllabus contents and introducing the latest / updated technologies, new knowledge and practices.
- To design the curriculum focussing on skill development, Employability and Entrepreneurship

## **III. Feedback from Stakeholders:**

- The syllabus is to be revised with the current trends of programming companies, pharma Industries and Academia
- More hands-on exposure to be provided to students to link theory with practice

## **IV. Number of New Courses Introduced:**

10 New Courses in UG

## **V. % of Syllabus Revision in the Program:**

UG 70% (Minimum 20% revision is mandatory)

## **VI. Status of Implementation of CBCS, ECS and LOCF:**

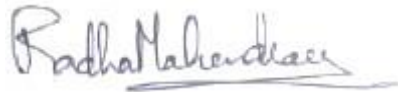

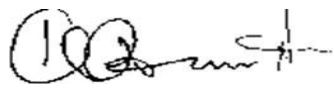
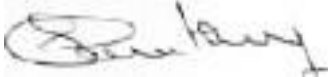

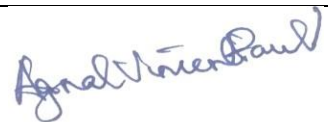


Revised Curriculum and Syllabus is based Choice Based Credit System (CBCS), Elective Course System (ECS) and following Learning outcome-based curriculum framework (LOCF) guidelines and template.

Considered the Program Curriculum and Syllabus presented before the Board of Studies and discussed in details and resolved as follows:

## **VII. Resolution:**

Resolved to recommend that the Curriculum & Syllabus for the B.Sc designed as per the guidelines and Model Curriculum Framework of UGC for the Academic year 2021 - 2022 be approved.

### VIII. Signature of the Members:

S.No	Name with Destination	Role	Signature
1.	Dr. Radha Mahendran, Professor & Head, Department of Bioinformatics, VISTAS, Chennai	Chairman	
2.	Dr.J. Suganya, Assistant Professor, Department of Bioinformatics, VISTAS	Internal Member	
3.	Dr.M.N Ponnusamy, Emeritus Professor, Dept of Crystallography and Biophysics, University of Madras, Guindy, Chennai	Academic Expert	
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7.	Ms. Kanmani.R	Alumni	
8.	Ms. Abinaya Gayathri E	Student	

**IX. Annexure I (Revision of UG courses focussed on employability/entrepreneurship/skill development and new courses introduced during the Academic year 2021-22)**

Name of the Program	Name of the Course	Year of Introduction	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
B.Sc Biocomputing	<b>Revision of UG courses</b>		
	Cell Biology and Biomolecules	2015-16	Skill development
	Biological databases and sequence analysis	2015-16	Employability
	Biological databases and sequence analysis – Practical	2015-16	Employability
	Genomics and Proteomics	2015-16	Skill development
	Enzymes and Metabolism	2015-16	Skill development
	Plant Bioinformatics	2015-16	Skill development
	Plant Bioinformatics Practical	2015-16	Skill development
	Perl for Bioinformatics	2015-16	Employability
	Structural Bioinformatics	2015-16	Skill development
	<b>New Courses Introduced</b>		
	Basic of Bioinformatics	2021-22	Skill development
	Basic concept of Bioinformatics - Practical	2021-22	Skill development
	Applied Bioinformatics	2021-22	Skill development
	Introduction to <i>Insilico</i> Drug Designing	2021-22	Employability
	Introduction to <i>Insilico</i> Drug Designing Practical	2021-22	Employability
	Structural Bioinformatics	2021-22	Skill development
	Genome Sequencing Technology	2021-22	Employability
	Clinical Pharmacokinetics	2021-22	Skill development
	R- Programing Language	2021-22	Employability
Microarray and its technology	2021-22	Skill development	

**X. Annexure II:****COURSES OF STUDY AND SCHEME OF ASSESSMENT**

(MINIMUM CREDITS TO BE EARNED: 140)

**B.Sc Biocomputing Course Components**

<b>Component</b>	<b>I Sem</b>	<b>II Sem</b>	<b>III Sem</b>	<b>IV Sem</b>	<b>V Sem</b>	<b>VI Sem</b>	<b>Total Credits</b>
Core Courses & Languages	22	22	20	21	4	-	89
Ability Enhancement Courses (AEC)	2	-	2	-	-	-	4
Discipline Specific Elective (DSE) & Generic Elective(GEC)	-	-	-	-	16	19	35
Skill enhancement Course(SEC)	-	2	2	3	2	3	12
<b>Total Credits</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>22</b>	<b>22</b>	<b>140</b>

## B.Sc. BIOCOMPUTING COURSE

### COURSES OF STUDY AND SCHEME OF ASSESSMENT

(MINIMUM CREDITS TO BE EARNED: 140)

#### SEMESTER 1

Code No.	Course	Hours/Week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	SEE	Total
LANG	Tamil I/ Hindi I/ French I	3	0	0	3	40	60	100
ENG	English I	3	0	0	3	40	60	100
CORE1	Basic of Computer, Algorithm and Statistics	4	0	0	4	40	60	100
CORE2	Basic of Bioinformatics	4	0	0	4	40	60	100
CORE3	Cell Biology and Biomolecules	4	0	0	4	40	60	100
CORE	Basic Concepts and Algorithm in Computer -Practical 1	0	0	4	2	40	60	100
CORE	Basic concept of Bioinformatics Practical 2	0	0	4	2	40	60	100
AECC	Communication Skills	2	0	0	2	40	60	100
SEC	Orientation/Induction programme / Life skills	-	-	-	-	-	-	-
		<b>20</b>	<b>0</b>	<b>8</b>	<b>24</b>			

CA - Continuous Assessment

SEE - Semester End Examination

## SEMESTER 2

Code No.	Course	Hours/Week			Credits	Maximum Marks		
		Lecture	Tutorial	Practical		CA	SEE	Total
LANG	Tamil II / Hindi II / French II	3	0	0	3	40	60	100
ENG	English II	3	0	0	3	40	60	100
CORE4	Programming in C	4	0	0	4	40	60	100
CORE5	Biological databases and sequence analysis	4	0	0	4	40	60	100
CORE6	Applied Bioinformatics	4	0	0	4	40	60	100
CORE	Programming in C- Practical 3	0	0	4	2	40	60	100
CORE	Biological databases and sequence analysis - Practical 4	0	0	4	2	40	60	100
SEC	Soft Skills - I / Sector Skill Council Course	2	0	0	2	40	60	100
SEC	NSS / NCC / Swachh Bharat / Inplant Training	-	-	-	-	-	-	-
		<b>20</b>	<b>0</b>	<b>8</b>	<b>24</b>			

CA - Continuous Assessment

SEE - Semester End Examination

## SEMESTER 3

Code No.	Course	Hours/Week			Credits	Maximum Marks		
		Lecture	Tutorial	Practical		CA	SEE	Total
LANG	Tamil III / Hindi III / French III	3	0	0	3	40	60	100
ENG	English – III	3	0	0	3	40	60	100
CORE7	Programming in C++	4	0	0	4	40	60	100
CORE8	Genomics and Proteomics	4	0	0	4	40	60	100
CORE9	Enzymes and Metabolism	4	0	0	4	40	60	100
AECC	Environmental Studies	2	0	0	2	40	60	100
CORE	Programming in C++ - Practical 5	0	0	4	2	40	60	100
SEC	Soft Skills - II / Sector Skill Council Course	2	0	0	2	40	60	100
SEC	Swayam / NPTEL / Value Added Course	-	-	-	-	-	-	-
		22	0	4	24			

CA - Continuous Assessment

SEE - Semester End Examination



## **SEMESTER 4**

Code No.	Course	Hours/Week			Credits	Maximum Marks		
		Lecture	Tutorial	Practical		CA	SEE	Total
LANG	Tamil IV / Hindi IV/ French IV	3	0	0	3	40	60	100
ENG	English IV	3	0	0	3	40	60	100
CORE10	Programming in JAVA	4	0	0	4	40	60	100
CORE11	Plant Bioinformatics	4	0	0	4	40	60	100
CORE12	Medical Coding and Transcription	3	0	0	3	40	60	100
CORE	Programming in JAVA - Practical 6	0	0	4	2	40	60	100
CORE	Plant Bioinformatics - Practical 7	0	0	4	2	40	60	100
SEC	Soft Skills III / Sector Skill Council Course	2	0	0	2	40	60	100
SEC	Internship / Capability Enhancement Programme	0	0	2	1	-	-	-
		19	0	10	24			

CA - Continuous Assessment

SEE - Semester End Examination

## SEMESTER 5

Code No.	Course	Hour / Week			Credits	Maximum Marks		
		Lecture	Tutorial	Practical		CA	SEE	Total
CORE	Perl for Bioinformatics	4	0	0	4	40	60	100
DSE	Python for Bioinformatics	4	0	0	4	40	60	100
DSE	Introduction to <i>Insilico</i> Drug Designing	4	0	0	4	40	60	100
DSE	Structural Bioinformatics	4	0	0	4	40	60	100
DSE	Perl and Python – Practical 8	0	0	4	2	40	60	100
DSE	Introduction to <i>Insilico</i> Drug Designing – Practical 9	0	0	4	2	40	60	100
SEC	Internship / Mini Project / Sector Skill Council Course	0	0	4	2	40	60	100
SEC	Skill Enhancement Training / Student Club Activities	-	-	-	-	-	-	-
		16	0	12	22			

CA - Continuous Assessment

SEE - Semester End Examination

## **SEMESTER 6**

Code No.	Course	Hour / Week			Credits	Maximum Marks		
		Lecture	Tutorial	Practical		CA	SEE	Total
DSE	Genome Sequencing Technology	4	0	0	4	40	60	100
DSE	Clinical Pharmacokinetics	4	0	0	4	0	60	100
DSE	R- Programming Language	4	0	0	4	40	60	100
DSE	Microarray and its Techniques	3	0	0	3	40	60	100
SEC	Entrepreneurship Development	2	0	0	2	40	60	100
DSE	Project Work	0	0	8	4	40	60	100
SEC	Technical Seminar / Innovation Council / Start up Initiative	0	0	2	1	40	60	100
		17	0	10	22			

CA - Continuous Assessment

SEE - Semester End Examination