

**Approved
Syllabus of
B.Sc.
Biotechnology
w.e.f - 2021-2022**

CHAITANYA
(Deemed to be University)
B.Sc., CBCS Common core Syllabi

Course Structure

The B.Sc. program consists of 132 credits in accordance with the Choice Based Credit System (CBCS) approved by the UGC with 1 weekly -contact-hour for each credit for theory/tutorials and 2 weekly-contact-hours for each credit of laboratory work.

1. Credit-wise Distribution - Out of 132 credits, 108 credits are equally divided among three optional subjects, denoted as A, B and C, (36 credits each). 36 credits for each subject are further distributed as 24 credits for Core Compulsory Courses (CC) and 12 credits for Discipline Specific Electives (DSE). There are 8 credits for Ability Enhancement Compulsory Courses. SEC's will have 16 credits.
2. Course-wise Distribution - There are 4 CC courses for each optional subject. Each CC course is of 6 credits (4 Theory + 2 Practicum). Similarly, there are 2 DSE papers, each of 6 credits. There are 4 Skill Enhancement Courses (SEC) each of 4 credits with a total of 16 credits. 16 credits of SEC are distributed as 12 credits (3 courses) for optional A, B & C and 4 credits (1 course for open elective). There are four AECC namely, English-I, English-II, Environmental Sciences and Basic computer skills with 2 credits.
3. Semester-wise Distribution – B.Sc. with Optional-A is a 3-Yr program with 6 semesters. In each semester, there will be 22 credits. For each of first four semesters, there will be 3 CC, one each for subjects A, B and C accounting to 18 credits. Similarly, for semesters 5 and 6, there will be 3 DSE in each semester and one DSE for each of three subjects (A, B and C). Two AECC will be offered in first two semesters. SEC will be offered in semesters 3, 4, 5 and 6 and a student is required to take any one SEC from a pool of options. However, in semesters 3 and 4, SEC for the auxiliary subjects will be offered and in semesters 5 and 6, SEC for Optional A will be offered.

A student can take more than 132 credits in total (but not more than 148 credits) to qualify for the grant of the B.Sc. (CS) degree after completing them successfully as per rules and regulations of the HEI.

Table presents the structure in a schematic form:

SEMESTER - I							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	English	AECC-I	2	2	15	35	50
	Basic Computer Skills	AECC-II	2	2	15	35	50
	Core I – Biotechnology (Cell Biology & Microbiology)	CC1 – A	4	4	30	70	100
	Core II	CC1 – B	4	4	30	70	100
	Core III	CC1 – C	4	4	30	70	100
	Core I Lab	CC1 - A - P	3	2	15	35	50
	Core II Lab	CC1 - B - P	3	2	15	35	50
	Core III Lab	CC1 - C - P	3	2	15	35	50
	Seminar		3	2	15	35	50
	TOTAL		28	24	180	420	600

SEMESTER - II							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	English	AECC-III	2	2	15	35	50
	Environmental Sciences	AECC-IV	2	2	15	35	50
	Core I – Biotechnology (Biostatistics & Techniques)	CC2 – A	4	4	30	70	100
	Core II	CC2 – B	4	4	30	70	100
	Core III	CC2 – C	4	4	30	70	100
	Core I Lab	CC2 - A - P	3	2	15	35	50
	Core II Lab	CC2 - B - P	3	2	15	35	50
	Core III Lab	CC2 - C - P	3	2	15	35	50
	Seminar		3	2	15	35	50
	TOTAL		28	24	180	420	600

SEMESTER - III							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	Open elective	SEC-I	4	4	30	70	100
	Core I – Biotechnology (Genetics)	CC3 – A	4	4	30	70	100
	Core II	CC3 – B	4	4	30	70	100
	Core III	CC3 – C	4	4	30	70	100
	Core I Lab	CC3 - A - P	3	2	15	35	50
	Core II Lab	CC3 - B - P	3	2	15	35	50
	Core III Lab	CC3 - C - P	3	2	15	35	50
	Seminar		3	2	15	35	50

	TOTAL		28	24	180	420	600
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SEMESTER - IV							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	SEC-II A Biotechnology (Bioinformatics) Option-I/II/III	SEC-II	4	4	30	70	100
	Core I – Biotechnology (Mol. Biology & r-DNA technology)	CC4 – A	4	4	30	70	100
	Core II	CC4 – B	4	4	30	70	100
	Core III	CC4 – C	4	4	30	70	100
	Core I Lab	CC4 - A - P	3	2	15	35	50
	Core II Lab	CC4 - B - P	3	2	15	35	50
	Core III Lab	CC4 - C - P	3	2	15	35	50
	Seminar		3	2	15	35	50
	TOTAL		28	24	180	420	600

SEMESTER - V							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	SEC-III B-	SEC-IIIA	4	4	30	70	100
	Core I –Biotechnology (Plant, Animal BT & Immunology)	DSE1 – A	4	4	30	70	100
	Core II	DSE1 – B	4	4	30	70	100
	Core III	DSE1 – C	4	4	30	70	100
	Core I Lab	DSE1 - A - P	4	2	15	35	50
	Core II Lab	DSE1 - B - P	4	2	15	35	50
	Core III Lab	DSE1 - C - P	4	2	15	35	50
	Seminar		3	2	15	35	50
	TOTAL		31	24	180	420	600

SEMESTER - VI							
CODE	COURSE TITLE	COURSE TYPE	HPW	CREDITS	Internal Marks	External Marks	Total Marks
	SEC-IV C	SEC-IVA	4	4	30	70	100
	Core I- Biotechnology(title....)	DSE2 - A	4	4	30	70	100
	Core II	DSE2 – B	4	4	30	70	100

	Core III	DSE2 – C	4	4	30	70	100
	Core I Lab	DSE2 - A - P	4	2	15	35	50
	Core II Lab	DSE2 - B - P	4	2	15	35	50
	Core III Lab	DSE2 - C - P	4	2	15	35	50
	Seminar		3	2	15	35	50
	TOTAL		31	24	180	420	600

S.No.	SEMESTER	CREDITS	MARKS
1	I	24	600
2	II	24	600
3	III	24	600
4	IV	24	600
5	V	24	600
6	VI	24	600
		144	3600

AECC: Ability Enhancement Compulsory Course	08 credits
SEC: Skill Enhancement Course	16 credits
CC : Core Compulsory	72 credits
DSE: Discipline Specific Elective	36 credits
Seminars	12 credits
Total	144 credits

Non CGPA Courses 12 credits*

NCC	2 credits
NSS	2 credits
Community Service	2 credits
Extra Curricular activities	2 credits
Farming	2 credits
Sports and Games	2 credits

*Non CGPA courses credits are not counted for CGPA calculation. Student should acquire minimum 4 Non CGPA credits to get degree.

Marks Distribution:

Theory:

Internal Marks: 30

First Internal – 10 marks
Second Internal – 10 marks
Assignment – 10 marks

External Marks : 70

Sections – A
12 Shorts questions (3 questions from each chapter)
6 questions to be answered
 $6 \times 5 = 30$ marks
Section –B
4 Long questions with internal choice from each chapter
 $4 \times 10 = 40$

Practical:

Internal Marks: 15

5 marks for attendance
10 marks for internal exam

External Marks: 35

5 marks for record
5 marks for viva-voce (written or oral)
25 marks for experiment

FACULTY OF SCIENCE
B.Sc. (OPTIONAL)
Title of the Paper: XXXXXX

Duration: 3 Hours]

[Max Marks=70M

SECTION-A
Short Answer type questions
Answer any SIX questions

[6 X 5 = 30M]

1. UNIT-I
2. UNIT-I
3. UNIT-I
4. UNIT-II
5. UNIT-II
6. UNIT-II
7. UNIT-III
8. UNIT-III
9. UNIT-III
10. UNIT-IV
11. UNIT-IV
12. UNIT-IV

SECTION-B
Essay Answer type question
Answer all questions

[4 X 10 = 40M]

13. A) UNIT – I
OR
B) UNIT - I
14. A) UNIT – II
OR
B) UNIT – II
15. A) UNIT – III
OR
B) UNIT – III
16. A) UNIT – IV
OR
B) UNIT - IV