

Bachelor of Science (Hons.) Biotechnology



From the Co-ordinator's Desk

Today, Biotechnology as a prominent and promising stream of Science has emerged to aid humanity in multifarious ways: be it the production of bio-fuels so as to cut greenhouse gas emissions, feeding the world by producing high yielding varieties of crops, procuring nutrient rich food, or cutting down upon the use of pesticides to restore an eco-friendly world.

However, Biotechnology in the last two decades has gained much popularity in the study of Applied Sciences. With the aim of imparting quality education in Biotechnology, GC Bilaspur started this course in 2010 and is running the same successfully for the last five years with a total strength of 30 students in each semester.

In order to cater to the academic needs of the students, department of Biotechnology has enriched itself with a galaxy of well-qualified and experienced teachers, who are devoted not only to ensure the academic excellence of their students but also work hard to keep the students well-informed about the pace of the ever-growing scientific world so that their students can make name and fame in the field of medicine, pharmaceutical, food industry, agriculture, research, environment, immunology and genetics. The college is committed to the all-round development of its students and is, thus, providing the best facilities, in the form of well-equipped laboratories, a well-stocked library with INFLIBNET and a peaceful ambience to its students.

I personally feel that the aspirations of the students, their quest for knowledge, their keen interest in the subject and their urge for a progressive life find its perfect destination in the department of Biotechnology. I also feel that with the global growth of the scientific world our students can undoubtedly dream of their resplendent future. Education is the most powerful weapon which you can use to change the world.

Prof. Sanjeev Kumar
Coordinator
B.Sc. (Hons.) Biotechnology

MESSENGER

B.Sc. (Hon's) Bio-TECH.



B.Sc. Honour's BIOTECHNOLOGY (NEW CBCS)

- I. The B.Sc. Honour's Biotechnology will be of three years duration Choice Based Credit System [CBCS] course.
- II. There will be broadly three types of courses for B.Sc. Honour's Biotechnology degree program.

1. The **Core Courses** (12 courses for Honour's) will be of 6- credits each including 2 credits assigned to the practical component. Thus a candidate will have to pass 12 courses for earning $12 \times 6 = 72$ credits during 1st and 2nd year. Each of the 6-credits courses will carry 100 marks. These 100 marks will be split into marks assigned for Theory [TH]: 50 marks; Practical [PR]: 20 marks and Internal Assessment [IA]: 30. The Internal Assessment [30 marks] will include one Multi Choice Questions (MCQ) based examination of 10 marks, Classroom Attendance Incentive marks (5 marks), Presentation/Assignment of 5 marks and Lab Seminar/Lab Assignment of 10 marks. The Lab-based practical will be of 2-hours [One credit]. A total of $12 \times 6 = 72$ credits could be accumulated under these courses during the Honour's degree program.
2. The **Elective Courses** will be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/ subject/domain or nurtures the candidate's proficiency / skill. The Elective Courses will include;

Discipline Specific Elective [DSE] Courses: A total of 8 courses offered under the main discipline/ subject of study is referred to as Discipline Specific Elective and will be studied by the candidates in 3rd year. These courses will be of 6-credits each including 2 credits assigned for the practical component of each of these courses. These courses are discipline related and/ or interdisciplinary in nature. A total of $8 \times 6 = 48$ credits could be accumulated under DSE courses during the Honour's degree program.

3. **Ability Enhancement Compulsory Courses [AECC]:** Ability Enhancement Courses are of two types; Ability Enhancement Compulsory Courses [AECC] and Skill Enhancement Courses [SEC]. The AECC courses are the mandatory courses based upon the content that leads to knowledge enhancement; i. Environment Science and ii. English/ Hindi/ MIL Communication. All these are mandatory courses for obtaining a B.Sc. Honour's degree in the concerned subject. These courses are mandatory for all disciplines. A total of $2 \times 4 = 08$ credits in 1st year could be accumulated under these courses during the Honour's degree program.

SEC courses are value-based and/ or skill-based and are aimed at providing hands on training, competencies, skills etc. A minimum of four such courses (3 SEC in Year II and 2 SEC in Year III) for obtaining an Honour's degree are selected amongst the courses designed to provide value-based and/ or skill-based

knowledge and may contain both theory and lab/ hands-on training. The main purpose of these courses is to provide students life-skills in hands-on mode so as to increase their employability. A total of $5 \times 4 = 20$ credits could be accumulated under SEC courses during the Honour's degree program.

- III. Practical [PR] component has been included in every core and discipline/ generic specific elective paper. The list of practical's to be conducted by the candidates has been provided alongside each of such courses. The marks (20 marks) for the practical examination will be split as follows;

Write up of Practical	4 marks
Performance of practical's	7marks
Practical record/ notebook	3 marks
Viva voce	6 marks

- IV. Classroom Attendance Incentive: Those candidates who have greater than 75% attendance (for those participating in Co-curricular activities, 25% will be added to percent attendance) will be awarded CAI marks as follows:

75% but < 80%	1 marks
80% but <85%	2 marks
85 but <90%	3 marks
90% but < 95%	4 marks
95% to 100%	5 marks

- V. The candidate has to secure minimum pass marks individually in Theory paper, Practical as well as Internal Assessment to earn full credits in the concerned course. A candidate thus failing in any of these components shall be considered failed in that course.

- VI. The admission to B.Sc. Honour's Biotechnology programme of Himachal Pradesh University will be as per guidelines of Himachal Pradesh University, Shimla from time to time.

- i. The candidate should have passed 10+2 (class XII) Examination or its equivalent from a recognized Board/ University with any of the three subjects out of Physics, Chemistry and Biology or any other science subject with 50% or equivalent grade (for SC/ ST candidates marks of eligibility will be 45% or equivalent grade).
- ii. In case of candidates who are studying in University/Board/College/Schools in any of the foreign countries the eligibility/Qualifying marks will be the same as recognized/equivalent to 10+2 by the University or the association of the Indian University with 50% marks of equivalent grade (for SC/ ST candidates, eligibility will be 45% marks or equivalent grade).
- iii. The candidate who has appeared in the qualifying examination but whose result has so far not been declared can also apply but his/her eligibility for the entrance

test will be purely provisional subject to the condition that he/she has to produced a passing certificate scoring at least the minimum percentage of marks as prescribed for the qualifying examination on the day and the specified time of counseling. The candidate shall not be more than 22 years of age as on 01st July of the year of admission. Date of birth as recorded in the Secondary Education Board/ University Certificate Only will be considered as authentic.

Detailed Course Outline for B. Sc. (Hons.) Biotechnology

Years	CORE COURSE (12)		Credits	Ability Enhancement Compulsory Course (AECC), (2)	Credits	Skill Enhancement Course (SEC), (5)	Credits	Discipline Specific Elective: (DSE), (8)	Credits
I	BIOTECH1C01TH	Biochemistry & Metabolism	4	ENGL103/Hindi/MIL Communication	4	Nil			
	BIOTECH1C01PR	Biochemistry & Metabolism	2						
	BIOTECH1C02TH	Cell Biology	4						
	BIOTECH1C02PR	Cell Biology	2						
	BIOTECH1C03TH	General Microbiology	4	ENVS1AECC02 Environment Science	4				
	BIOTECH1C03PR	General Microbiology	2						
	BIOTECH1C04TH	Genetics	4						
BIOTECH1C04PR	Genetics	2							
BIOTECH1C05TH	Molecular Biology	4							
BIOTECH1C05PR	Molecular Biology	2							
BIOTECH1C06TH	Chemistry-1	4							
BIOTECH1C06PR	Chemistry-1	2							
II	BIOTECH2C07TH	Immunology	4			Any 3 SEC Subjects in year II	12		
	BIOTECH2C07PR	Immunology	2						
	BIOTECH2C08TH	Bioprocess Technology	4						
	BIOTECH2C08PR	Bioprocess Technology	2						
	BIOTECH2C09TH	Recombinant DNA Technology	4						
	BIOTECH2C09PR	Recombinant DNA Technology	2						
	BIOTECH2C10TH	Bio Analytical Tools Bio	4						
BIOTECH2C10PR	Analytical Tools	2							
BIOTECH2C11TH	Environmental Biotechnology	4							
BIOTECH2C11PR	Environmental Biotechnology	2							
BIOTECH 2C12TH	Chemistry-2	4							
BIOTECH 2C12PR	Chemistry-2	2							
III						Any 2 SEC Subjects in year III	8	Any 8 DSE Subjects in III year from the list (Theory=4 & Practical=2)	48
Core Course Total Credits =			72	AECC Total Credits =	8	SE Total Credits =	20	Discipline Specific Total Credits =	48

Total Credits: 72+8+20+48 = 148 TH: Theory PR :Practical C:Core Courses; AECC: Ability Enhancement Compulsory Course; SEC: Skill Enhancement Courses; DSE: Discipline Specific Elective

Structure of B.Sc. (Hons) Biotechnology under CBCS Core Course

BIOTECH1C01	Biochemistry & Metabolism	BIOTECH2C07	Immunology
BIOTECH1C02	Cell Biology	BIOTECH1C03	General Microbiology
BIOTECH2C08	Bioprocess Technology	BIOTECH2C09	Recombinant DNA Technology
BIOTECH1C04	Genetics	BIOTECH2C10	Bio Analytical Tools
BIOTECH1C05	Molecular Biology	BIOTECH2C11	Environmental Biotechnology
BIOTECH1C06	Chemistry-1	BIOTECH2C1	Chemistry-2

Skill Enhancement Elective Course (Any 3 SEC Subject in IInd year and any 2 SEC subjects in IIIrd year from the list)

II year	III Year
BIOTECH2SEC01Molecular Diagnostics	BIOTECH3SEC06 Industrial Fermentations
BIOTECH2SEC02Enzymology	BIOTECH3SEC07 Basics of Forensic Science
BIOTECH2SEC03Bioinformatics	BIOTECH3SEC08 IPR Entrepreneurship, Bioethics and Biosafety
BIOTECH2SEC04Microbial Metabolism	BIOTECH3SEC09 Genomics and proteomics
BIOTECH2SEC05Biotechnology and human welfare	BIOTECH3SEC010 Developmental Biology

Discipline Specific Elective (Any 8 DSE Subjects in III year from the list)

III Year		
BIOTECH3DSE01Animal Biotechnology	BIOTECH3DSE10	Biostatistics
BIOTECH3DSE02Plant Biotechnology	BIOTECH3DSE11	Ecology and Environment Management
BIOTECH3DSE03Medical Microbiology	BIOTECH3DSE12	Animal Diversity I
BIOTECH3DSE04Food Biotechnology	BIOTECH3DSE13	Plant Diversity I
BIOTECH3DSE05Biochemical Engineering	BIOTECH3DSE14	Animal Diversity II
BIOTECH3DSE06Mammalian Physiology	BIOTECH3DSE15	Plant Diversity II
BIOTECH3DSE07 Bacteriology and virology	BIOTECH3DSE16	Chemistry-3
BIOTECH3DSE08Plant Physiology	BIOTECH3DSE17	Chemistry-4
BIOTECH3DSE09Microbial Physiology		

Ability Enhancement Compulsory Course : ENGL103 English Communication ENVS1AECC02 Environment Science

Course Fees (in Rupees) For Session 2020-21

1st , 2nd & 3rd Year 40 ,000/- Annual

The course fee is subject to change as per HPU and H.P. Govt. Directions. The fee once deposited cannot be refunded.

- Rs. 500/- shall be taken as counseling fee from the student of 1st Semester Rs.500 shall be taken as university development fund. (Rs. 250/- for IRDP & BPL)
- Rs. 300/- (Rs. Three Hundred Only) will be charged toward PTA fund in addition to course fee.
- The students of 1st Semester will have to deposit Rs. 1000/- (Rs. One Thousand only) refundable library security.
- There shall be enhancement of 10% of tuition fee after every three year.
- Youth Red Cross Membership fee Rs. 40/- will be charged separately.

Fine

1. Absence fine per period Rs. 5.00
2. Absence fine-MTT (per paper) Rs. 100.00
3. Mobile use in class room fine Rs. 50.00
4. Late Return of library book Rs. 1.00 per day
5. Without lab coat Rs. 20.00

6. Without dress

Rs. 10.00

Dress Code

The B. Sc. (Hons)Bio-Technology Advisory Board has passed a dress code for the students of B. Sc. (Hon's) Bio-Technology. The dress code will be observed for four days in a week i.e. Monday, Tuesday, Thursday & Friday. The students can come to college on Wednesday and Saturday in colorful dresses. This dress code will also apply to the students of B. Sc. with Major in Bio-Technology The prescribed dress is as follows:

S. No.	Items	Colour
1.	Shirt	White
2.	Pant	Black
3.	Blazer	Black
4.	Tie	Black
5.	Sweater	Grey
6.	Socks	Black
7.	Shoes	Black
8.	Lab Coat	White

Note: The dress code to the student's of B. Sc. (Hons) Bio-Technology is mandatory along with the white lab coat while entering in Lab.

Faculty Profile

Administrative Faculty

1)	Prof. Ram Krishan	Chairperson (HEIS)
2)	Prof. Sita Ram	Member Secretary (HEIS)
3)	Prof. Sanjeev Kumar	Course Coordinator

Academic Faculty

1)	Rohini Kanta	Asstt. Prof
2)	Aakanksha Sharma	Asstt. Prof
3)	Sonika Kumari	Asstt. Prof

Office Staff

1)	Mrs. Jamna Devi	Office Assistant cum Computer Operator
2)	Ms. Kamlesh	Librarian

Lab Staff

1)	Mr. AjayKumar	Lab Boy
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Online Submission of Application Form

Last date for submission of application online form 31 July 2020

DOCUMENTS REQUIRED FOR ONLINE ADMISSION

1. All students willing to take admission in 1st year need to click on the link apply. Now for the registration, up to 31st July 2020.
2. After registration students will receive login Id and password, using which they need to login for the admission and submit the desired details and documents in application.
3. Scanned copies of all Board certificates from matric onwards.
4. Scanned copy of character certificate from the head of institution last attended.
5. A valid Own/Family member mobile number/Email account. All communication will be sent through SMS and Email.
6. Recent passport size photograph scanned in 140 x 180 pixel resolution and less than 200 KB in size.
7. Students with a gap of one year or more must have to accept declaration along with affidavit.
8. The candidates from other Boards/University, must submit:
 - a. Eligibility certificate from H.P. Board/University showing equivalence.
 - b. Migration Certificate.
10. SC/ST scanned certificate for those seeking relaxation or weightage.
11. The candidates belong to IRDP, NCC, NSS, Sports, Cultural Quota those seeking relaxation or weightage must upload scanned copy of certificate

IMPORTANT

1. THE CANDIDATE FINALLY SELECTED FOR B.Sc (HONS.) Biotechnology is ABIDE BY ALL THE RULES, GUIDELINES AND DIRECTIONS AS CONTAINED IN THE PROSPECTUS OF THE GOVT. P.G. COLLEGE BILASPUR FOR THE ACADEMIC SESSION 2020-21

IMPORTANT

1. THE CANDIDATE FINALLY SELECTED FOR B.SC (HONS.) BIOTECHNOLOGY ARE ABIDE BY ALL THE RULES, GUIDELINES AND DIRECTIONS AS CONTAINED IN THE PROSPECTUS OF THE GOVT. P.G. COLLEGE BILASPUR FOR THE ACADEMIC SESSION 2020-21
2. THE COURSE FEE ONCE DEPOSITED WILL NOT BE REFUNDED IN ANY CASE.

Prof. Ram Krishan
Principal/Director
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