



SHRI GURU RAM RAI UNIVERSITY

Patel Nagar, Dehradun-248001, Uttarakhand, India

[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 & recognized by UGC u/s (2f) of UGC Act 1956]

Dated: 30/07/2024

MINUTES OF MEETING

FIFTH BOARD OF STUDIES MEETING IN UG BIOTECHNOLOGY, PG IN BIOTECHNOLOGY AS PER NEP AND PhD IN BIOTECHNOLOGY

A meeting of all the members of the Board of Studies in Biotechnology held on 30 July 2024 from 11:00 am onwards at School of Basic & Applied Sciences, Shri Guru Ram Rai University, Patel Nagar, Dehradun. The following members were present:

1. Prof. (Dr.) Arun Kumar, Professor Biotechnology and Dean, SBAS, Shri Guru Ram Rai University, Dehradun-(Chairperson)
2. Prof. (Dr) Gulshan Kumar Dhingra, Professor and Head, Department of Botany Pt. LMS, Govt. Post Graduate College, Rishikesh-(External Expert)
3. Dr. Sachin Chauhan, Director and Principal Scientist, Taq Gene Training and Research Institute (TGTRI), Kotda Santoor, Nanda ki Chowki, Dehradun-(External Expert)
4. Prof. (Dr.) Kumud Saklani, Professor Botany and Dean Academics, Shri Guru Ram Rai University, Dehradun-(Special Invitee)
5. Dr. Naveen Gaurav, Associate Professor and Head, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Convener)
6. Dr. Lokesh Gambhir, Associate Professor and Dean Research, SGRRU, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
7. Dr. Manish Dev Sharma, Associate Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
8. Mr. Ravindra Kumar, Associate Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
9. Dr. Rashmi Verma, Assistant Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
10. Ms. Sanskriti Negi, Research Scholar, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Research Scholar-Biotechnology)
11. Ms. Umera Qureshi, Alumni, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Alumni- Biotechnology)

PROCEEDINGS AND RESOLUTIONS:

The members of the BOS discussed the agenda item wise and resolutions were made accordingly
Agenda No. 1: To confirm the minutes of fourth Board of Study in Biotechnology held on 3rd July 2023 for the UG, PG and Ph. D. in Biotechnology.

Resolutions: All the members confirmed and approved the minutes of fourth Board of Study in Biotechnology held on 3rd July 2023 for the UG, PG and PhD in Biotechnology.

Agenda No. 2: Introduction of New Program/New Courses in UG in Biotechnology [B.Sc. Biotechnology (Three Years)/ B.Sc. Biotechnology (Honors) (Four Years)/B.Sc. Biotechnology (Honors with Research) (Four Years)], PG in Biotechnology [M.Sc. Biotechnology (Two Year/One Year)], PhD Biotechnology as per NEP and CBCS at Shri Guru Ram Rai University.

Implementation of NEP from the Academic Session 2024-25 (For UG, PG and PhD

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Biotechnology) and Implementation of NEP from the Academic Session 2025-26 (For One Years PG). Inclusion and finalization of Program outcomes (POs), Program specific outcomes (PSOs), Course outcomes (COs) of B.Sc. Biotechnology, M.Sc. Biotechnology as per NEP, and PhD Biotechnology as per CBCS/UGC Guidelines/University ordinance.

Resolution: It was recommended by the members of the board that from the academic session 2024-25 implementing NEP in the UG (B.Sc. Biotechnology/ B.Sc. Biotechnology (Honors)/B.Sc. Biotechnology (Honors with Research), PG (M.Sc. Biotechnology) and PhD Biotechnology course courses outcomes should be included in the curriculum. The Program outcomes (POs), Program specific outcomes (PSOs), Course outcomes (COs) for UG, PG and PhD in Biotechnology, were discussed in detail with the honorable members and all the members resolved to approve the same from the honorable external expert. Revised UG Biotechnology NEP 2020 syllabus of 3rd July 2023 on 30th July 2024 will be applicable for the UG Biotechnology session 2024-2025 (for batch 2023-24)

Note- PG (M.Sc. Biotechnology, for One Year) shall be implementing on academic session 2025-2026

Agenda No. 3: To consider distribution of courses for all semesters in B.Sc. Biotechnology/ B.Sc. Biotechnology (Honors)/ B.Sc. Biotechnology (Honors with Research), M.Sc. Biotechnology and PhD Biotechnology as per CBCS/NEP guidelines for the Academic Session 2024-25.

Resolution: The distribution of courses for all semesters in the UG, PG and PhD Biotechnology program as per CBCS/NEP-2020 was discussed in detail with the honorable members and it was resolved to approve and implement the same for the academic session 2024-25 with the recommendation to revise the course contents in future.

As per NEP-

For UG Biotechnology

1. First year course will be consider as Certificate course in Biotechnology (**Certificate in Biotechnology**).
2. Second year course will be consider as Diploma course in Biotechnology (**Diploma in Biotechnology**).
3. Third year course will be consider as Bachelor Degree course in Biotechnology (**B.Sc. Biotechnology**).
4. Fourth year course will be consider as Honors Degree course in Biotechnology/ Bachelor Degree course in Biotechnology with research [**B.Sc. Biotechnology (Honors)/ B.Sc. Biotechnology (Honors with Research)**](as per students choice).

For PG Biotechnology

1. A bachelor's degree with Honors/ Honors with Research with a minimum of 160 credits for a 1-year/2-semester PG programme (40 Credits) at level 6.5 on the NHEQF (National Higher Education Qualifications Framework) (**Shall be implemented in Academic Session 2025-2026**). *176 credits as per SQRRU Framework.*
2. A 3-year/6-semester bachelor's degree with a minimum of 120 credits for a 2-year/4- semester PG programme (80 Credits) at level 6.5 on the NHEQF (National Higher Education Qualifications Framework). *132 Credits as per SQRRU Framework.*
3. A 4-year Bachelor's degree (e.g. B.E., B.Tech. etc.) with a minimum of 160 credits for a 2-year/4-semester PG programme (80 Credits) at level 7 of NHEQF (National Higher Education Qualifications Framework). *176 Credits as per SQRRU Framework.*
4. A student is eligible for a PG programme in a discipline corresponding to either major or minor(s) discipline in UG programme. In this case, the University can admit the students in the PG programme based on the student's performance in the UG programme or through an entrance

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examination/counseling. However, irrespective of the major or minor disciplines chosen by a student in a UG programme, a student is eligible for admission in any discipline of PG programmes if the student qualifies the National level or University level entrance examination in the discipline of the PG programme/as per University Rules and Regulations.

5. We are following the UGC link: https://www.ugc.gov.in/pdfnews/2990035_Final-NHEQF.pdf and https://www.ugc.gov.in/pdfnews/3826733_Draft_PG_Curriculumn.pdf for the “draft curriculum and credit framework for PG programmes” as per NEP.
6. In accordance with the NHEQF, the levels for the PG programme are given in the Table.1

Table 1

S.No.	Qualifications	Level	Credits	Credit Points
	1-Year PG after a 4-year UG	6.5	40	260
	2-Year PG after a 3-year UG	6.5	40+40=80	260
	2-Year PG after a 4-year UG such as B.E., B. Tech. etc.	7.0	40+40=80	280

For PhD Biotechnology

As per Research Ordinance/UGC Guidelines/ University Rules and Regulations

Agenda No. 4: The inclusion of Program outcome (POs)/Program specific outcome/ Course outcome etc. in the revised UG course in Biotechnology, PG course in Biotechnology and PhD course in Biotechnology.

Resolutions: Program outcome (POs)/Program specific outcome/ Course outcome etc.in the revised UG and PG Biotechnology programme and course outcome in PhD Biotechnology programme was discussed in detail with the honorable members.

Agenda No. 5: Addition, deletion or modification in syllabi if required

- i. All members of the Board of Studies went through the syllabus of respective UG in Biotechnology, PG in Biotechnology PhD Biotechnology course program thoroughly and resolved to pass the complete syllabus for all the semesters.
- ii. After going through the syllabus, detailed discussion took place with certain corrections and suggestions from all the members.
- iii. Details of the suggestions by the members of BOS are as follows:
 - ❖ Some suggested original suggested reading and text books were included in all the course programmes to enrich the academic content in various subjects.
 - ❖ POs/PSOs/COs were also included in the syllabus as per NEP/CBCS norms.
 - ❖ Changes in syllabus to accommodate and address regional/local aspiration as per NEP/CBCS norms have also been recommended.

Agenda No. 6: Allotment and description of course code and credits to different courses in the UG [B.Sc. Biotechnology/ B.Sc. Biotechnology (Honors)/ B.Sc. Biotechnology (Honors with Research)], PG Biotechnology (One Year/ Two Year) and Ph.D. Biotechnology degree programme for all semesters.

Resolutions:

For: B.Sc. Biotechnology

(a) Credit defines the quantum of contents/ syllabus prescribed for a course and determines the number of hours of instruction required per week. Thus credits shall be assigned on the basis of the number of lectures/ tutorials / laboratory work/ project work and other forms of learning required to complete the course contents in a 15 week schedule.

(b) 1 Credit = 1 hour of lecture for theory and 1 Credit = 2 hour of laboratory for practicals.

(c) Motivate students with industrial visit, educational trip, seminar/conference during semester.

Total Credits:

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- A. 64 (DSC/MC)+ 16 (DSE/ME)+ 16 (GE/OE)+ 08 (VAC)+ 12 (SEC)+ 08 (AEC)+ 08 (Minor Project/Educational of Tour) =130 (For three years B. Sc. Biotechnology)
- B. 130 (For three years B. Sc. Biotechnology)+ 16 (DSC/MC)+ 8 (DSE/ME)+ 08 (OE)+ 12 (Project)= 176 [For four years B. Sc. Biotechnology (Honors)]
- C. 130 (For three years B. Sc. Biotechnology)+ 12 (DSC/MC)+ 19 (Research Project)+ 13 (Dissertation)=176 [For four years B. Sc. Biotechnology (Honors with Research)]
- D. Where,
- DSC/MC=Discipline Specific Core/ Major Core
 - DSE/ME= Discipline Specific Elective/Major Elective
 - GE/OE= Generic Elective/Open Elective
 - VAC= Value Addition Course
 - SEC= Skill Enhancement Course
 - AEC= Ability Enhancement Course
- E. Undergraduate degree programmes of either 3 or 4-year duration, with multiple entry and exit points and reentry options within this period, with appropriate certifications such as:
1. a certificate after completing 1 year (2 semesters) of study in the chosen fields of study,
 2. a diploma after 2 years (4 semesters) of study,
 3. a bachelor's degree after a 3-year (6 semesters) programme of study,
 4. a bachelor's degree with honors after a 4-year (eight semesters) programme of study or a bachelor's degree honors with research after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in their major area(s) of study.
 5. Students will be eligible for B.Sc. Biotechnology (Honors) when the secure 60% in 3rd year and eligible for B.Sc. Biotechnology (Honors with research) when the secure 75% in 3rd year
- F. Remote/blended learning modes: Options will be available for students to earn credit by completing quality-assured remote learning modes, including online programmes offered on the Study Webs of Active Learning for Young Aspiring Minds (SWAYAM: www.swayam.gov.in) or other online educational platform approved by the competent body from time to time. Students may opt to earn credits from such courses up to 40 per cent of the total credits required for the award of a certificate/Diploma/Degree.
- G. *If students want to quit the course after first year or second year it will be compulsory to obtain one month 4 Credit exit course.
- H. Students can opt Generic elective/ Open Elective/Value Addition courses/Skill Enhancement courses either from other Department or From Host Department.

M.Sc. Biotechnology (One Year Program)

Credits:

One year Master's Program in Biotechnology shall be based on the choice based credit system or as per NEP 2020 in which credit defines the quantum of content/ syllabus prescribed for a course system and determines the number of hours of instruction per week.

The student shall be eligible for admission to one year Master's Degree Program in Biotechnology after he/she has successfully completed a four years undergraduate degree (either Honors or Honors with Research) or earned prescribed number of credits through the examinations conducted by University as equivalent to an undergraduate four year degree program (either Honors or Honors with Research). Students of B. Tech in Biotechnology will be applicable for two year master program.

Core courses prescribed for every Semester shall be mandatory for all students registered for the one year Master's Program in Biotechnology and shall carry minimum 40 credits (for one year program). There shall be Elective courses offered in semester I and shall carry a minimum of 10 credits and 10 credits shall be covered by two core paper both are consider as course paper with 20 credits. A self-study course would comprise of maximum 06 credits of which minimum 03 credits shall be mandatory which shall not be included while calculating grades. The student may

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choose self-study course either only in one of the two semesters (I/II). The self study course shall be based on advanced topics.

The dissertation is a semester long core course of 20 credits and is mandatory for every student. The dissertation would be allotted in the beginning of III Semester and candidate would submit the thesis/report during IV Semester examination. The dissertation may be in the form of a field based research work/ project work/ practical training. The students may complete the dissertation work in the department/ other research institutes/ industries/ hospitals etc.

The 1- Year Masters Programme will have the following components:

- 1) Core course (C): Minimum 10 credits
- 2) Elective course (E): Minimum 10 credits (Core+ Elective= Course papers)
- 3) Major Research/ Dissertation 20
- 4) Self study course: Maximum 06 credits (One minimum 03 credits shall be mandatory but not to be included while calculating grades).

M.Sc. Biotechnology (Two Years Program)

Credits:

Master's Program in Biotechnology shall be based on the choice based credit system or as per NEP 2020 in which credit defines the quantum of content/ syllabus prescribed for a course system and determines the number of hours of instruction per week.

The student shall be eligible for admission to a Master's Degree Program in Biotechnology after he/she has successfully completed a three year undergraduate degree or earned prescribed number of credits through the examinations conducted by University as equivalent to an undergraduate degree.

Core courses prescribed for every Semester shall be mandatory for all students registered for the Master's Program in Biotechnology and shall carry minimum 80 credits (for two year program). There shall be Elective courses offered in semester III and IV and shall carry a minimum of 20 credits. A self-study course would comprise of maximum 06 credits of which minimum 03 credits shall be mandatory which shall not be included while calculating grades. The student may choose self-study course either only in one of the two semesters (III/IV). The self study course shall be based on advanced topics.

In order to qualify for a two year master's degree, a student must acquire a minimum of 80 credits including a minimum of 30 credits in electives choosing at least two electives in Semester III offered either by the parent department or other departments and one qualifying self-study course.

The dissertation is a semester long core course of 20 credits and is mandatory for every student. The dissertation would be allotted in the beginning of III Semester and candidate would submit the thesis/report during IV Semester examination. The dissertation may be in the form of a field based research work/ project work/ practical training. The students may complete the dissertation work in the department/ other research institutes/ industries/ hospitals etc.

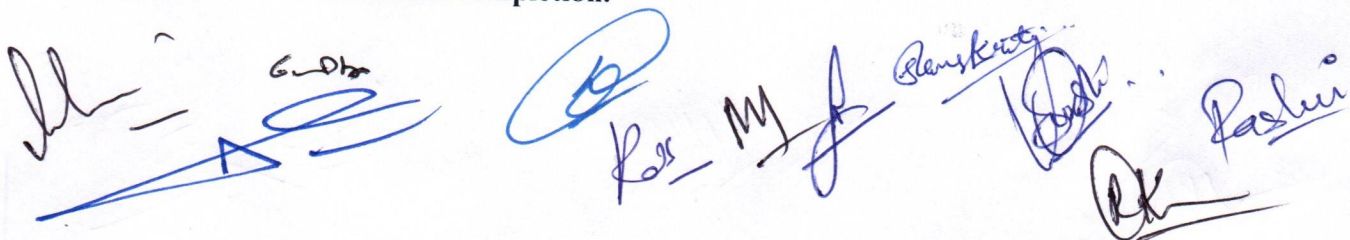
The 2- Year Masters Programme will have the following components:

- 1) Core course (C): Minimum 50 credits
- 2) Elective course (E): Minimum 10 credits
- 3) Dissertation: 20 Credits For Research in IV Semester
- 4) Self study course: Maximum 06 credits (one minimum 03 credits shall be mandatory but not to be included while calculating grades).

Note- For those who join 2 year PG programmes, there shall only be one exit point. Students who exit at the end of 1st year shall be awarded a Postgraduate Diploma in Biotechnology

Ph. D. Biotechnology

- a. Addition of program code and allotment and discrimination of Credits with minimum marks criteria for successful completion.

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b. Addition of course outcome in each paper.

S.N.	Paper Code	Subject	Credits L:T:P	Total credit	Total marks (External + Internal)	Minimum marks to be scored for successful completion
1.	PRMC 101	Research methodology	2:1:1	4	80 (60+20)	40
2.	RPEC 102	Research & Publications Ethics	1:1:0	2	40 (30+10)	20
3.	PBTC 103	Subject Specific (core paper): Tools & Techniques	2:1:1	4	80 (60+20)	40
4.	PBTE 104 (a/b/c/d)	Subject Specific (elective paper) one out of four	2:1:1	4	80 (60+20)	40
5.	PBTF 105	Field work	0:2:2	4	80 (00+80)	40
Total				18	360	180

Agenda No. 7: Medium of instruction, question paper pattern, medium of examination, and duration of examination, allotment of marks in internal and external exams.

Resolutions:

B.Sc. Biotechnology

A. Nomenclature:

There will be full time Biotechnology Degree Programme named as B. Sc. Biotechnology (three full academic years), B.Sc. (Hons.) Biotechnology (four full academic years) and B.Sc. (Hons.) Biotechnology with Research (four full academic years). The duration of this programme shall be of three years/four years (three/four full academic years) which shall be divided into six semesters/eight semesters. Each semester will be of six months. Actual teaching in each semester is required minimum of 90 days. The examination for the first, third, fifth and seventh semester will normally be held in the month of December and for the second, fourth, sixth and eight semester in the month of May or as convenient to the University.

B. The Medium of Instruction:

As per NEP 2020.

C. The Medium of Examination:

As per NEP 2020.

D. Intake: The intake to B. Sc. Biotechnology course is 40 students. It may increase or decrease as per provisions of the University.

E. Eligibility to apply for Admission:

No candidate shall be eligible for admission to three years/four years Full Time B. Sc. Biotechnology (three full academic years), B.Sc. (Hons.) Biotechnology (four full academic years) and B.Sc. (Hons.) Biotechnology with Research (four full academic years) unless he/she has successfully completed higher secondary or Intermediate (with any biological/mathematical/science subject) with prescribed number of credits or percentage through the examinations conducted by a National/State Board. Such qualifications as recognized by the University. Any candidate who has passed the plus two of the higher secondary board of Examinations in any state recognized as equivalent to the plus two of the Higher Secondary Board in with not less than 45 % marks in aggregate is eligible for admission, However, SC/ST, OBC and other eligible communities shall be given relaxation as per University rules.

Duration of the Programme: 3/4 Years

F. Selection Procedure for Admission: A candidate willing to seek admission to B. Sc. Biotechnology (three full academic years), B.Sc. (Hons.) Biotechnology (four full academic years) and B.Sc. (Hons.) Biotechnology with Research (four full academic years) will have to appear in written entrance Test conducted by the University or on behalf of the University and followed by the counseling as per University norms. The selection for admission will be made on

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merit basis or as per University norms.

G. Semesters:

(a) An academic year shall consist of two semesters :

Odd Semester (I, III, V and VII Semester) : generally July to November/December

Even Semester (II, IV, VI and VIII Semester): generally January to May/ June

The academic calendar for each semester shall be notified well before the commencement of the semester by the Dean, School of Basic and Applied Sciences.

(b) A semester shall normally extend over a period of 15 weeks. Each week shall have 30 hours of instruction including lab/ field work as applicable.

H. Fee and Resource Generation

As per decision of the University.

I. Examination and Evaluation

(a) Evaluation will be done on a continuous basis. Three times during each semester. For the purpose of uniformity, there will be a uniform procedure of examination to be adopted by all teachers. There will be two sessional tests (Three if any student are unable to attend any sessional test) and one end-semester examination.

(b) Sessional tests (of one to two hours duration) may employ one or more assessment tools such as objective tests, assignments, paper presentation, laboratory work, etc suitable to the course. This requires an element of openness. The students are to be informed in advance about the nature of assessment. It will be obligatory for the Students to attend the both Sessional tests, failing which they will not be allowed to appear in the concerned semester examination. The sessional test as part of the continuous internal assessment shall be conducted and evaluated by the teacher offering the course. A Student cannot repeat sessional tests (without permission from HOD). However, if for any compulsive reason the student could not attend the test, the prerogative of arranging a special test lies with the teacher with the approval of the Head of the Department. In case of students who could not attend any of the sessional tests due to medical reason or under extraordinary circumstances, a separate test shall be conducted before the concerned semester examinations by the concerned faculty member after the approval of the Head of the Department and the Dean concerned.

(c) The sessional tests will carry 30% of total marks for the course. The marks of the two Sessional Tests shall be taken into account for the computation of Grades.

(d) There shall be a written end semester examination which shall be of 2/3 hours duration carrying 70% of total marks assigned for the course, covering the entire syllabus prescribed for the course.

(e) The end semester practical examinations (field tour report, project report and training report) shall normally be held before the theory examination/or as per convenience by the Department . The internal faculty shall associate themselves with the examination process.

M.Sc. Biotechnology (One Year Program)

A. Nomenclature:

There will be full time Master's Degree Programme named as M.Sc. in Biotechnology which will be written as M.Sc. Biotechnology. The duration of this programme shall be of one year (one full academic year) which shall be divided in to two semesters. Each semester will be of six months. Actual teaching in each semester is required minimum of 90 days. The examination for first semester will normally be held in the month of December and for the second semester in the month of May or as convenient to the University.

B. The Medium of Instruction:

As per NEP 2020.

C. The Medium of Examination:

As per NEP 2020.

D. Eligibility to apply for Admission:



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No candidate shall be eligible for admission to **One Year Full Time M.Sc. Biotechnology** unless he/she has successfully completed a four years Under Graduate Degree either Honors or Honors with Research (with any Biological/Applied science subjects/Agriculture sciences/Medical sciences/Biotechnology/Microbiology/Zoology/Botany) with prescribed number of Credits through the Examinations conducted by a University/Autonomous Institution or possesses such qualifications as recognized by the University. Further a candidate holding four years Bachelor Degree (either Honors or Honors with Research) in any biological science discipline from a recognized University without credit system shall also be eligible. The maximum age of a candidate for taking admission in the programme and the gap between the last Degree/Diploma courses shall be as per the norms as prescribed by the university from time to time.

E. Selection Procedure for Admission: A candidate willing to seek admission to M.Sc. Biotechnology will have to appear in Written Entrance Test conducted by the University or on behalf of the University and followed by the counselling as per University norms. The selection for admission will be made on merit basis or as per University norms.

F. Semesters:

An academic year shall consist of two semesters:

Odd Semester (I Semester) : generally July to November/December

Even Semester (II Semester): generally December to January to May/ June

The academic calendar for each semester shall be notified well before the commencement of the semester by the Dean, School of Basic and Applied Sciences.

G. Student Advisor:

Every student shall have a teacher of the Department as his/her Student Advisor. All teachers of the department shall function as Student Advisors and will have more or less equal number of students with them. The Student Advisor will advise the students in choosing Elective courses and offer all possible student support services.

H. Attendance:

- a. The teacher handling a course shall be responsible for maintaining a record of attendance of students who have registered for the course.
- b. All teachers shall intimate the Head of the Department at least seven calendar days before the last instruction day in the semester, the particulars of all students who have less than 75% attendance in one or more courses.
- c. A candidate who has less than 75% attendance shall not be permitted to sit for the End-semester examination in the course in which the shortfall exists. However, it shall be open to the Dean/HOD to grant exemption to a candidate who has failed to obtain the prescribed 75% attendance for valid reasons on payment of prescribed fee and such exemptions shall not under any circumstances be granted for attendance below 65%.
- d. A candidate who fails to put in least 75% attendance in I semester shall not be allowed to pursue the studies in II semester. Such candidates may apply to the Dean/HOD for re-registration in the I semester in the next academic session.

Note : Rest of the provisions will be as framed by the University.

J. Fee and Resource Generation

As per decision of the University.

K. Examination and Evaluation

- (a) Evaluation will be done on a continuous basis. Three times during each semester. For the purpose of uniformity, there will be a uniform procedure of examination to be adopted by all teachers. There will be two Sessional tests (Three if any student are unable to attend any sessional test) and one End-semester examination.
- (b) Sessional tests (of one to two hours duration) may employ one or more assessment tools such as objective tests, assignments, paper presentation, laboratory work, etc suitable to the course. This requires an element of openness. The students are to be informed in advance about the nature of



Odd Semester (I and III Semester) : generally July to November/December

Even Semester (II and IV Semester): generally December to January to May/ June

The academic calendar for each semester shall be notified well before the commencement of the semester by the Dean, School of Basic and Applied Sciences.

G. Student Advisor:

Every student shall have a teacher of the Department as his/her Student Advisor. All teachers of the department shall function as Student Advisors and will have more or less equal number of students with them. The Student Advisor will advise the students in choosing Elective courses and offer all possible student support services.

H. Attendance:

- a. The teacher handling a course shall be responsible for maintaining a record of attendance of students who have registered for the course.
- b. All teachers shall intimate the Head of the Department at least seven calendar days before the last instruction day in the semester, the particulars of all students who have less than 75% attendance in one or more courses.
- c. A candidate who has less than 75% attendance shall not be permitted to sit for the End-semester examination in the course in which the shortfall exists. However, it shall be open to the Dean/HOD to grant exemption to a candidate who has failed to obtain the prescribed 75% attendance for valid reasons on payment of prescribed fee and such exemptions shall not under any circumstances be granted for attendance below 65%.
- d. A candidate who fails to put in least 75% attendance in I semester shall not be allowed to pursue the studies in II semester. Such candidates may apply to the Dean/HOD for re-registration in the I semester in the next academic session. A candidate who fails to put in at least 75% attendance in the II semester shall not be promoted to III semester. Such candidates may apply to the Dean/HOD for re-registration in the II semester in the next academic session.

Note : Rest of the provisions will be as framed by the University.

I. Fee and Resource Generation

As per decision of the University.

J. Examination and Evaluation

- (a) Evaluation will be done on a continuous basis. Three times during each semester. For The purpose of uniformity, there will be a uniform procedure of examination to be adopted by all teachers. There will be two Sessional tests (Three if any student are unable to attend any sessional test) and one End-semester examination.
- (b) Sessional tests (of one to two hours duration) may employ one or more assessment tools such as objective tests, assignments, paper presentation, laboratory work, etc suitable to the course. This requires an element of openness. The students are to be informed in advance about the nature of assessment. It will be obligatory for the Students to attend the both Sessional tests, failing which they will not be allowed to appear in the concerned semester examination. The Sessional test as part of the continuous internal assessment shall be conducted and evaluated by the teacher offering the course.
A Student cannot repeat Sessional Tests (without permission from HOD). However, if for any compulsive reason the student could not attend the test, the prerogative of arranging a special test lies with the teacher with the approval of the Head of the Department. In case of students who could not attend any of the Sessional tests due to medical reason or under extraordinary circumstances. a separate test shall be conducted before the concerned semester examinations by the concerned faculty member after the approval of the Head of the Department and the Dean concerned.
- (c) The Sessional tests will carry 40% of total marks for the course. The marks of the two Sessional Tests shall be taken into account for the computation of Grades.

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- (d) There shall be a written End Semester Examination which shall be of 2/3 hours duration carrying 60% of total Marks assigned for the course, covering the entire syllabus prescribed for the course.
- (e) The End Semester practical examinations (field tour report, project report and Training report) shall normally be held before the theory examination/or as per convenience by the Department . The internal faculty shall associate themselves with the examination process.
- (f) Valuation of Dissertation and Viva- voce: Dissertation / project report shall be evaluated jointly by internal and one external examiner.

Ph. D. Biotechnology

A. Nomenclature:

There will be full time Doctoral Degree Programme named as Ph. D. in Biotechnology which will be written as PhD Biotechnology.

B. The Medium of Instruction:

The medium of Instruction will be English.

C. The Medium of Examination:

The medium of examination will be English.

D. Eligibility to apply for Admission:

As per Ph. D. ordinance of University.

E. Selection Procedure for Admission: A candidate willing to seek admission to Ph. D. Biotechnology will have to appear in Written Entrance Test conducted by the University followed by the Interview as per University norms.

F. Fee and Resource Generation

As per University norms.

Agenda No. 8: Evaluation pattern and distribution of marks

Resolutions:

All the members of BOS were of the the view that the evaluation pattern and distribution of marks should be at par with other subjects and should follow university norms to bring uniformity.

Agenda No. 9. New Syllabus and Revised syllabus shall be run/implementing in 2024.

Resolutions:

- A. PG Biotechnology (Two Years Program)- New Syllabus as per NEP implementing in 2024-25 Batch
- B. PG Biotechnology (One Years Program)- New Syllabus as per NEP implementing in 2025-26 Batch
- C. UG Biotechnology syllabus 2022- Revised in 2024 (Applicable for Batch 2022-23 only)
- D. UG Biotechnology syllabus 2023 as per NEP 2020- Revised in 2024 (Applicable for Batch 2024-25 also) / *New UG Biotech. syllabus for the new batch 2024-25.*
- E. PhD Biotechnology syllabus- Revised in 2024

Agenda No. 9. Exit Point for UG & PG.

Resolutions:

- A. If students want to quit the UG course after first year or second year it will be compulsory to obtain one month 4 Credit exit course. *As per MEME S & R R V Guidelines.*
- B. For those who join 2 year PG programmes, there shall only be one exit point. Students who exit at the end of 1st year shall be awarded a Postgraduate Diploma.

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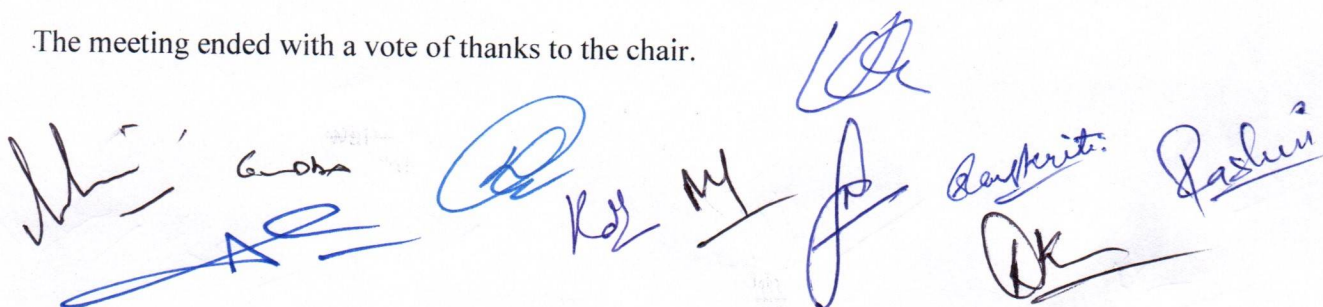
Agenda No. 10. List of Examiner for Theory/Practical/Dissertation/Viva voce examinations:

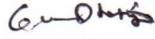
Resolutions:

S. No.	Name of Examiner	Affiliating Institute/University
1	Professor Gulshan Kumar Dinghra	Department of Botany, Shri Dev Suman University, Rishikesh, Uttrakhand
2	Professor Pravindra Kumar	Department of Biosciences and Bioengineering, Indian Institute of Technology, Roorkee- 247667, Uttrakhand
3	Professor V. K. Bajaj	Department of Biotechnology, Jammu University, J&K
4	Professor Rahul Kumar	Department of Plant Breeding and Genetics, Meerut University, Meerut -250004, Uttar Pradesh
5	Professor Gaurav Sharma	Department of Biotechnology, Suresh Gyan Vihar University, Jaipur-333031, Rajasthan
6	Dr. Sujeet Kumar	Department of Biotechnology, Amity University, Lucknow-226010, Uttar Pradesh
7	Dr. Mamta Arya	Department of Biotechnology, Hemvati Nandan Bahuguna University, Garhwal-246174, Uttrakhand
8	Dr. Kumud Bala	Department of Medical Biotechnology, Amity University, Noida-201303, Uttar Pradesh
9	Dr. Pooja Saklani	Department of Biotechnology, Hemvati Nandan Bahuguna University, Garhwal-246174, Uttrakhand
10	Dr. Poonam Choudhary	Department of Biosciences and Bioengineering, Indian Institute of Technology, Roorkee- 247667, Uttrakhand
11	Professor Harsh Vardhan Pant	Department of Chemistry, Shri Guru Ram Rai (PG) College, Dehradun- 248001, Uttrakhand
12	Professor Deepshikha Pande Katare	Department of Medical Biotechnology, Amity University, Noida-201303, Uttar Pradesh
13	Dr. Indra Rautela	Department of Biotechnology, Uttaranchal University, Dehradun-248007, Uttrakhand
14	Dr. Nidhi Belwal	Department of Microbiology, Sardar Bhagwan Ssingh University, Dehradun-248161, Uttrakhand
15	Professor Anuja Pandey	School of Pharmaceutical Sciences, Himgiri, Zee University, Dehradun-248011, Uttrakhand
16	Dr. Pankaj Kumar Assistant Professor	Department of Microbiology, Hemvati Nandan Bahuguna University, Garhwal-246174, Uttrakhand
17	Dr. Neha Kapoor	Department of Biotechnology, Suresh Gyan Vihar University, Jaipur-333031, Rajasthan


*No of Examiner may be increase or decrease as per University Norms


The meeting ended with a vote of thanks to the chair.

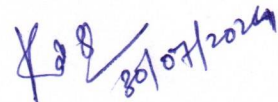






Prof. (Dr) Gulshan Kumar Dhingra
(External Expert)



Dr. Sachin Chauhan
(External Expert)


Prof. (Dr.) Arun Kumar
(Chairperson)



Prof. (Dr.) Kumud Saklani
(Invited Member)



Dr. Naveen Gaurav
(Convener)



Dr. Lokesh Gambhir
(Member)


Dr. Manish Dev Sharma
(Member)


Mr. Ravindra Kumar
(Member)


Dr. Rashmi Verma
(Member)


Ms. Sanskriti Negi
(Scholar)


Ms. Umera Qureshi
(Member)



SHRI GURU RAM RAI UNIVERSITY
Patel Nagar, Dehradun-248001, Uttarakhand, India
[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 &
recognized by UGC u/s (2f) of UGC Act 1956]

Dated: 30/07/2024

MINUTES OF MEETING

**FIFTH BOARD OF STUDIES MEETING FOR THE BATCH 2022-2025 IN
UG BIOTECHNOLOGY AS PER NEP 2020**

A meeting of all the members of the Board of Studies in Biotechnology was held on 30 July 2024 from 11:00 am onwards at School of Basic & Applied Sciences, Shri Guru Ram Rai University, Patel Nagar, Dehradun. The following members were present:

1. Prof. (Dr.) Arun Kumar, Professor Biotechnology and Dean, SBAS, Shri Guru Ram Rai University, Dehradun-(Chairperson)
2. Prof. (Dr) Gulshan Kumar Dhingra, Professor and Head, Department of Botany Pt. LMS, Govt. Post Graduate College, Rishikesh-(External Expert)
3. Dr. Sachin Chauhan, Director and Principal Scientist, Taq Gene Training and Research Institute (TGTRI), Kotda Santoor, Nanda ki Chowki, Dehradun-(External Expert)
4. Prof. (Dr.) Kumud Saklani, Professor Botany and Dean Academics, Shri Guru Ram Rai University, Dehradun-(Invited Member)
5. Dr. Naveen Gaurav, Associate Professor and Head, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Convener)
6. Dr. Lokesh Gambhir, Associate Professor and Dean Research, SGRRU, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
7. Dr. Manish Dev Sharma, Associate Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
8. Mr. Ravindra Kumar, Associate Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
9. Dr. Rashmi Verma, Assistant Professor, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Member)
10. Ms. Sanskriti Negi, Research Scholar, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Research Scholar- Biotechnology)
11. Ms. Umera Qureshi, Alumni, Department of Biotechnology, School of Basic & Applied Sciences, Shri Guru Ram Rai University, Dehradun-(Alumni- Biotechnology)

PROCEEDINGS AND RESOLUTIONS:

The members of the BOS discussed the agenda item wise and resolutions were made accordingly

Agenda No. 1: To confirm the minutes of Board of Study in Biotechnology held on 6th January 2023 (Revised in 30th July 2024).

Resolutions: All the members confirmed and approved the minutes of Board of Studies in Biotechnology held on 6th January 2023 (Revised in 30th July 2024).

Agenda No. 2: Introduction of New Program/New Courses (as per Annexure I) in UG in Biotechnology [Bachelor of Science- Biotechnology (Honors)] (as per NEP 2020 and CBCS) at Shri Guru Ram Rai University. Implementation of NEP-2020 from the Academic Session 2022-23 (Revised in 30th July 2024) & Inclusion and finalization of Program outcomes (POs), Program specific outcomes (PSOs), Course outcomes (COs) of B.Sc. (Biotechnology as per NEP 2020 and CBCS).

Resolution: It was recommended by the members of the board that from the academic session 2022-23 (Revised in 30th July 2024) implementing NEP in the UG Biotechnology course [Bachelor of Science- Biotechnology (Honors)] and course outcomes should be included in the curriculum. The Program outcomes (POs), Program specific outcomes (PSOs), Course outcomes (COs) for UG in Biotechnology were discussed in detail with the honorable members and all the members resolved to approve the same from the honorable external expert.

Program code	Program name
C-1201	Bachelor of Science- Biotechnology (Honors)

Agenda No. 3: To consider distribution of courses for all semesters in Bachelor of Science- Biotechnology Honors as per CBCS/NEP guidelines for the Academic Session 2022-23 (Revised in 30th July 2024).

Resolution: The distribution of courses for all semesters in the UG Biotechnology program as per CBCS/NEP 2020 was discussed in detail with the honorable members and it was resolved to approve and implement the same for the academic session 2022-23 (Revised in 30th July 2024) with the recommendation to revise the course contents in future.

As per NEP- 2020 for the single discipline subject:- Third year course will be consider as Bachelor Degree course in Honors Biotechnology [Bachelor of Science- Biotechnology (Honors)].

Agenda No. 4: The inclusion of Program outcome (POs)/ Program specific outcome/ Course outcome etc. in the revised UG course programme.

Resolutions: Program outcome (POs)/ Program specific outcome/ Course outcome etc. in the revised UG Biotechnology course programme was discussed in detail with the honorable members.

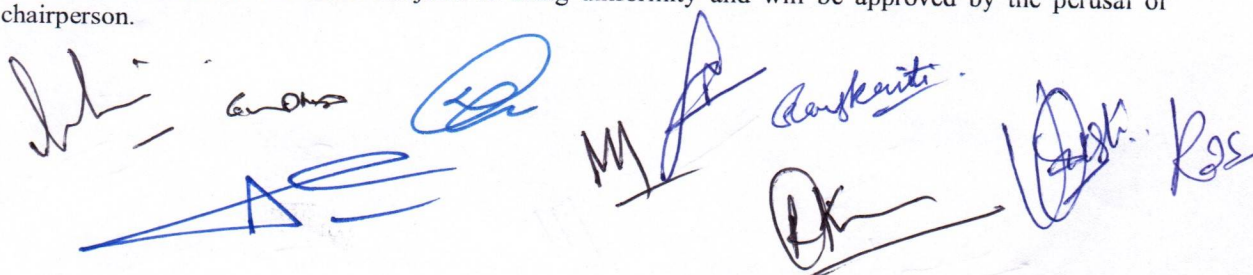
Agenda No. 5: Addition, deletion or modification in syllabi if required for the academic session 2022-23 (Revised in 30th July 2024):-

- i. The Honorable expert along with the members of the Board of Studies went through the syllabus of respective UG in Biotechnology course program thoroughly and resolved to pass the complete syllabus for all the sixth semesters.
- ii. After going through the syllabus, detailed discussion took place with certain corrections and suggestions from all the members.
- iii. Details of the suggestions by the members of BOS are as follows:
 - ❖ Some suggested original suggested reading and text books were included in all the course programmes to enrich the academic content in various subjects.
 - ❖ POs/PSOs/COs were also included in the syllabus as per NEP/CBCS norms.
 - ❖ Changes in syllabus to accommodate and address regional/local aspiration as per NEP/CBCS norms has also been recommended.

Agenda No. 6: Allotment and description of course code and credits to different courses in the UG [Bachelor of Science- Biotechnology (Honors)] degree programme for all semesters for the academic session 2022-23 (Revised in 30th July 2024).

Resolutions:

The course code and credits of all the course program has been changed according to NEP 2020 and CBCS system. However, the credits and course code of new courses introduced would be finalized after discussion of BOS of the other subjects to bring uniformity and will be approved by the perusal of chairperson.



Agenda No. 7: Medium of instruction, question paper pattern, medium of examination, and duration of examination, allotment of marks in internal and external exams.

Resolutions:

- ❖ The members were of the view that the medium of instruction would be English medium for all the course program which would be as per SGRR University norms.
- ❖ The duration of the End term examination would be two or three hours for each theory papers as per University norms. The lab course examination in UG [**Bachelor of Science- Biotechnology (Honors)**] course would be as per University norms.
- ❖ **Each paper would be of 100 marks [Remedia biology would be of 50 marks].**

Agenda No. 8: Evaluation pattern and distribution of marks

Resolutions:

All the members of BOS were of the the view that the evaluation pattern and distribution of marks should be at par with other subjects and should follow university norms to bring uniformity.

The meeting ended with a vote of thanks to the chair.

Annexure 1

Program code	Program name	Course code	Course name	Modification
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 101	Biochemistry and Metabolism	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 103	Cell Biology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 105a & BITME 105b	Developmental Biology/ Industrial Fermentations	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITOE 107	Advance Bioinformatics 1	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITVC 108	Food Processing and Preservation	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 109	Environmental Science	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITRB 110	Remedial Biology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 102	Lab course based on course BITMC 101	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 104	Lab course based on course BITMC 103	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 106a & BITME 106b	Lab course based on course BITME 105a & BITME 105b	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 201	Mammalian Physiology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 203	Plant Physiology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 205a & BITME 205b	Entrepreneurship Development/ Basics of Forensic Science	Impemented in New program as per NEP 2020

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C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITOE 207	Advanced Bioinformatics II	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITTVC 208	Anthropology in Disaster Management	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 209	English Communication	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 202	Lab course based on course BITMC 201	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 204	Lab course based on course BITMC 203	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 206a & BITME 206b	Lab course based on course BITME 205a & BITME 205b	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 301	Genetics	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 303	General Microbiology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 305a & BITME 305b	Chemistry-I/ Green Chemistry	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITOE 307	Bioethics and Biosafety	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITVC 308	Disaster Management	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 309	Molecular Diagnostics	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 302	Lab course based on course BITMC 301	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research			Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 304	Lab course based on course BITMC 303	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research			Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 306a & BITME 306b	Lab course based on course BITME 305a & BITME 305b	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 401	Molecular Biology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 403	Immunology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 405a/405b	Chemistry 2/Enzymology	Impemented in New program as per NEP 2020

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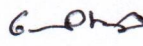
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C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITOE 407	Biotechnology and Human Welfare	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITVC 408	Basic Instrumentation Skills	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 409	Drug Designing	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 402	Lab course based on course BITMC 401	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 404	Lab course based on course BITMC 402	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 406a/406b	Lab course based on course BITME 405a/405b	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 501	Bioprocess technology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 503	Recombinant DNA Technology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 505a/505b	Animal Diversity-I/ Animal Biotechnology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 507a/507b/507c	Plant Diversity I/Plant Biotechnology/ Bioinformatics	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 509	Intellectual Property Rights	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITPE 510	Project/Educational Tour Report I	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 502	Lab course based on course BITMC 501	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 504	Lab course based on course BITMC 503	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 506a/506b	Lab course based on course BITME 505a/505b	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 508a/508b/508c	Lab course based on course BITME 507a/507b/507c	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 601	Bio Analytical Tools	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 603	Genomics & Proteomics	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 605a/605b/605c	Animal Diversity-II/ Microbial Physiology/ Biostatistics	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 607a/607b	Plant diversity-II/ Environment	Impemented in New program as per NEP 2020

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	Biotechnology with Research		Biotechnology	
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	COCCR 609	Medical Microbiology	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITPE 610	Project/Educational Tour Report II	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 602	Lab course based on course BITMC 601	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITMC 604	Lab course based on course BITMC 603	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 606a/606b/606c	Lab course based on course BITME 605a/605b/605c	Impemented in New program as per NEP 2020
C-1201	B.Sc. Biotechnology/ B.Sc. (Hons.) Biotechnology/ B.Sc. Biotechnology with Research	BITME 608a/608b	Lab course based on course BITME 607a/607b	Impemented in New program as per NEP 2020


Prof. (Dr) Gulshan Kumar Dhingra

(External Expert)


Prof. (Dr.) Arun Kumar


(Chairperson)


Dr. Naveen Gaurav

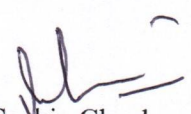
(Convener)


Dr. Manish Dev Sharma

(Member)


Ms. Sanskriti Negi

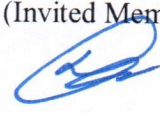
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(Member)


Mr. Ravindra Kumar

(Member)

Dr. Rashmi Verma

(Member)


Ms. Umera Qureshi

(Member)