Department of Biotechnology

TERI School of Advanced Studies

Venue: TERI School of Advanced Studies Date: 5 April 2024

(Hybrid mode, Online on MS Teams) Time 15:00-17:00

https://teams.microsoft.com/dl/launcher/launcher.html?url=%2F_%23%2Fl%2Fmeetup-join%2F19%3Ameeting_NjJjMmQyNWUtMGExMS00M2U1LWEzNjMtMjI0M2I3MWJkYjE3%40thread.v2%2F0%3Fcontext%3D%257b%2522Tid%2522%253a%25225414b437-dda3-4010-8995-a32d07c57b23%2522%252c%2522Oid%2522%253a%25222ed46895-d25c-4fd9-a26d-386f0b51c3b6%2522%257d%26anon%3Dtrue&type=meetup-join&deeplinkId=4f395cf6-8812-48a0-9419-39c89eb2e531&directDl=true&msLaunch=true&enableMobilePage=true&suppressPrompt=true

Agenda: Board of Studies meeting

1. Revision of Program structure to align with the NHEQF guidelines.
2. Brainstorming on future UG/PG or Integrated UG/PG/PhD. program(s)
3. Faculty requirements of the Department

.List of members who attended the meeting:

Prof. Ashis Nandi, SLS, JNU (External member)

Prof. Shailendra Goel, Department of Botany, DU (External member)

Prof. Ranjit Giri, NBRC, Manesar (Special invitee)

Prof. Suman Kumar Dhar, VC, TERI SAS (Special invitee)

Prof. Anandita Singh (Member)

Prof. Ramakrishnan Sitaraman (Member)

Dr. Chaithanya Madhurantakam (Member)

Dr. Shashi Bhushan Tripathi (Member)

1. **Revision of Program structure to align with the NHEQF guidelines.**
Two changes in the overall program structure are made to align the credit requirements as per NHEQF. The course BBP 112 Statistics for the Life Sciences is shifted from Semester 2 to Semester 3. Second, the credits of course BBP 108 Major Project credits are changed from 16 to 20. Accordingly, the total credit requirement for overall program is 82. The revised program structure with the changes highlighted in yellow is attached as Annexure 1.

Conclusion: The above changes in program structure was approved by the BoS members.

2. **Brainstorming on future UG/PG or Integrated UG/PG/PhD. program(s)**
A detailed discussion happened among the BoS members on this topic. Following points were unanimously agreed upon by the members.

   a. The name of the program was finalised as B.Sc. Biotechnology (FYUP). This will be launched from academic year 2025-26 as per UGC model curriculum.
   b. The external members recommended that the program should be designed keeping in view the employability/placement prospects.

3. **Faculty requirements of the Department**
The external BoS members suggested that to launch and run a 4-year UG program on B.Sc. Biotechnology together with a Master's program, at least 10 faculty members are required at initial stage. It was decided that representation of various domains of biotechnology are required to do justice to teach theory and practical courses of the UG and PG programs offered by the department.

The panel members weighed in on the immediate necessity to recruit faculty members for following core disciplines:
a. Bioinformatics
b. Statistical genetics
c. Mammalian tissue culture
d. Cell biology
e. Synthetic biology
f. Virology

The future trajectory for academic programs from DBT were discussed. It was recommended that faculty recruitment must be done in a time-bound manner based on the growing requirement considering the student strength per batch per program, requirements for conducting laboratory classes and number of batches.

.....Meeting Ended at 17.00 .....

Prof. Ashis Nandi (External member)	Prof. Shailendra Goel (External member)	Prof. Anandita Singh (Member)
Prof. Ramakrishnan Sitaraman (Member)	Dr. Chaithanya Madhurantakam (Chairperson, BoS)	Dr. Shashi Bhushan Tripathi (Programme Coordinator, M.Sc. Biotechnology)

Prof. Ranjit Giri
NBRC, Manesar (Special invitee)

Annexure 1

Total credits: 82

Overall program structure

Semester	Courses	Credits	Duration
1st Semester	7 core courses of 2-7 credits each, and 2 core audit courses	21	15 weeks
2nd Semester	7 core courses of 2-7 credits and 1 course of 2 credits in the area of specialisation**	20	15 weeks
Second Year			
3rd Semester	4 core courses of 2-7 credits and 1 course of 3 credits in the area of specialisation**	21	15 weeks
4th Semester	Major project	20	15 weeks
	Total	**82**	

Detailed program structure

Semester	Course No.	Course Title	Type	Number of Credits	No. of L-T-P
Semester 1	NRE 113	Applied mathematics	Core	0	33-12-0
Semester 1	BBP 111	Bioanalytical techniques	Core	3	39-6-0
Semester 1	BBP 174	Bioinformatics and computational biology - Part I	Core	2	22-8-0
Semester 1	BBP 105	Biotechnology laboratory - Part 1	Core	7	7-0-196
Semester 1	NRE 106	Communication Skills and Technical Writing	Core	0	16-14-0
Semester 1	BBP 158	Conceptual foundations of molecular biology	Core	2	30-0-0
Semester 1	BBP 123	Plant and Animal Biotechnology	Core	2	45-0-0
Semester 1	BBP 161	Principles of Biochemistry and Biophysics	Core	2	30-0-0
Semester 1	BBP 155	Principles of genetic engineering and recombinant DNA technology	Core	3	30-15-0
Semester 2	BBP 106	Biotechnology Laboratory - Part 2	Core	7	0-0-210
Semester 2	BBP 144	Conservation Genetics and Genomics	Core	2	30-0-0
Semester 2	BBP 146	Genome Structure and Diversity: Concepts and	Core	3	23-22-0

Semester	Course No.	Course Title	Type	Number of Credits	No. of L-T-P
		Methodologies			
Semester 2	BBP 115	Introduction to Nanobiotechnology	Core	2	22-8-0
Semester 2	BBP 145	Microbial Pathogenesis	PE	2	15-15-0
Semester 2	BBP 114	Molecular Cell Biology - From Genes to Communities	Core	2	30-0-0
Semester 2	BBP 131	Molecular Microbiology and Immunology	Core	2	30-0-0
Semester 2	BBP 116	Molecular Plant Physiology and Metabolism	PE	2	30-0-0
Semester 3	BBP 112	Statistics for The Life Sciences	Core	3	30-15-0
Semester 3	BBP 141	Bioethics, IPR and Regulations in Biotechnology	Core	3	39-6-0
Semester 3	BBP 162	Bioprocess Engineering and Environmental Biotechnology	PE	3	30-15-0
Semester 3	BBP 103	Biotechnology Laboratory - Part 3	Core	7	0-0-210
Semester 3	BBP 147	Molecular Genetics for Plant Functional Genomics: Principles and Practice	PE	3	22-23-0
Semester 3	BBP 163	Gene Expression Analysis and Transcriptomics	Core	2	30-0-0
Semester 1	NRE 165	Introduction to Sustainable Development	OE	0	15-0-0
Semester 3	BBP 164	Proteomics and Protein Engineering	Core	3	45-0-0
Semester 4	BBP 108	Major project	Core	20	0-0-672

(on behalf of DBT-TERI SAS)