Department of Biochemical Engineering and Biotechnology
Minutes of the Departmental Faculty Board Meeting
(DFB-02/2023-2024)

04/09/2023

The second meeting of the *Departmental Faculty Board* for the academic session 2023-2024 was held on **Monday, September 4th, 2023** at **10:30 AM** in the Committee Room of the Department. This was a special DFB called by the HOD to discuss the suggestions from the DUGC held on 8th of August, 2023, on the impending curriculum revision.

The following members were present:

Prof. Ritu Kulshreshtha, Chairperson
Prof. Prashant Mishra
Prof. KJ Mukerjee
Prof. Shilpi Sharma
Prof. Preeti Srivastava
Prof. Ravikrishnan Elangovan
Prof. Ashish Mishra
Prof. Ishaan Gupta
Prof. Lucinda Doyle
Prof. Kumari Priti Sinha
Prof. Anjan Roy
Prof. Amit Das, Convener

The DUGC Convener presented in front of the DFB the modifications on the departmental UG curriculum suggested by the DUGC committee, which met recently. The overall credit structures was also discussed. Please refer to Annexure #1 for proposed modifications.

Item 1: Changes in UG biochemical engineering courses offered by the department

BBL133: A change in the credit structure from existing L-T-P = 3-0-0 to 2-1-0 is suggested by the DUGC. Prof Priti Sinha, who is teaching the course right now, shared that the course makes extensive use of tutorial sessions – so the suggested change is welcome. The DFB is okay with the change.

BBL331: This is a current departmental core course for UG. Suggestion from DUGC is to make this into a new version of BBL775 (current program core for PG) and change the course title to "Bioreaction Engineering", so that it can be a common course for both BTech and MTech programs. DFB's concern is that it may be a mismatch of load required for the PG and UG programs. No resolution is reached in DFB. This point will be re-discussed by the DUGC.

BBP332: The DUGC suggestion is to remove this course which DFB find okay.

BBL431: The DUGC suggestion is no change. The course structure will be revamped though.

BBL432: The DUGC suggestion is to make this a new 4-credit course from the existing BBL432 which offers only 2 credits. The new name proposed is "Fluid mechanics for biological systems". DFB suggest that this course should be taught later. A new order of courses was suggested. First necessary foundation may be provided by the Bioprocess Technology course, which may be followed by the Bioprocess Engineering course, and then the new BBL432 would be appropriate. However, a possible slot to offer this course is needed to be discussed.

BBL433: The DUGC suggestion is to move the reactor part of this course to the new renamed Bioprocess Engineering course. This change should be rediscussed again by the DUGC and subsequently by the DFB.

BBL731: This is also proposed to be a UG + PG combined course, along with new BBL775. DFB is okay with this change subject to appropriate load restructuring. Should be rediscussed again by the DUGC.

BBL732: No change suggested and accepted by the DFB.

BBL733: No change suggested and accepted by the DFB.

BBL734: This is a course on Metabolic regulation & Engineering. The DUGC proposal is to make it a departmental core for UG and an elective for MTech since it is a 700 level course. The suggestion from DFB is that it should remain a program elective. DFB suggest more discussion in DUGC.

This makes the updated credit requirements for UG to 27 from the Biochemical Engineering part of the UG curriculum.

Item 2: Chemical engineering courses

CLL122: No change suggested and accepted by the DFB.

CLL231: DUGC proposal is to remove this course and combine with BBL432 and to be offered as a single course of 4 credits.

CLL251 & CLL252: DUGC proposal is to combine these into a 4-credit course titled 'Heat and mass transfer for biological systems'. DFB notice that currently it is difficult to execute, so possibly move away from the idea.

CLP301, CLP302 and CLL261: No change suggested by the DUGC. DFB is generally okay but more discussion may be needed.

Item 3: Changes in UG biosciences courses offered by the department

BBL131: The principles of biochemistry course for 2nd year UG students. The current course credit structure is 3-0-3. The DUGC proposal is to reduce some load through introduction of

another course, possibly on biomolecular chemistry. The proposed structure for this course from the DFB is 3-0-2. A tutorial component was discussed but to limit the load that was not considered at this moment.

BBL132: The microbiology course for 2nd year UG students, also with a credit structure 3-0-3. For this one also, the DUGC proposal is to reduce some load. The proposed structure from DUGC is 3-0-2, and rename to 'Cell biology'. Prof Shilpi clearly described the course contents and argued that the current course is more than cell structure. The DFB also supported that Cell biology should become a separate course if needed but should not replace the current microbiology course.

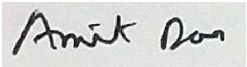
BBLXXX: A possible new core course on cell biology was discussed which will add 3 extra credits to the curriculum. A possible immunology module in this course was suggested which can be discussed in future DFB.

BBLXXX: A new core course on biomolecular chemistry/ thermodynamics of biological systems/ physical biology was considered but the discussion postponed to a future DFB.

The suggested changes would make the updated credit requirements for UG to 24 from the biosciences part of the UG curriculum.

Rest of the suggested changes will be discussed in another future DFB.

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



Amit Das,
DFB Convener

Annexure 1

Departmental Core courses

Area	Old course number	New course number	Old Course Title	New course title	L	T	P	Credits	Comments
Biochemical Engineering	BBL133	NO CHANGE	Mass and energy balances in Biochemical Engineering	NO CHANGE	2	1	0	3	Earlier credit structure was 3-0-0
	BBL331	BBL775	Bioprocess Engg	Bioreaction Engg	3	0	2	4	To be replaced with BBL775
	BBP332		Bioprocess Engg lab	Course to be removed					Replaced with BBL775 (Bioreaction engg course which has practical component also)
	BBL431	NO CHANGE	Bioprocess Technology	No change	2	0	0	2	The course content to be revamped
	BBL432	BBLXXX	Fluid solid systems	Fluid mechanics for biological systems	3	0	2	4	Earlier credit structure was 2-0-0, CLL231 (Fluid mechanics for chemical engineers) to be combined with BBL432
	BBL433	NO CHANGE	Enzyme Science and Engg		2	0	2	3	Reactor part may be moved to bioprocess engg course. Earlier credit structure was 3-0-2.
	BBL731	NO CHANGE	Bioseparation Engg	NO CHANGE	3	0	2	4	Earlier credit structure was 3-0-3
	BBL732	NO CHANGE	Bioprocess Plant Design	NO CHANGE	3	0	2	4	
	BBL734	NO CHANGE	Metabolic regulation & Engineering	NO CHANGE	3	0	0	3	This course was previously program core (PC)
								27	
	CLL122	NO CHANGE	Chemical Reaction Engineering I		3	1	0	4	
	CLL231		Fluid mechanics for chemical Engineers	Course to be removed					Course to be combined with BBL432 and will be offered as a single course of 4 credits
Chemical Engineering	CLL251		Heat Transfer	Heat and mass transfer for biological systems				4	Heat and mass transfer to be combined and offered as one course depending upon the recruitment of new faculty.
	CLL252		Mass transfer					4	
	CLP 301		Chemical Engg lab 1					1.5	
	CLP302		Chemical Engg lab 2					1.5	
	CLL261	NO CHANGE	Process dynamics and control					4	
								19	
Biosciences	BBL131	NO CHANGE	Principles of Biochemistry	NO CHANGE	2	0	2	3	Earlier credit structure was 3-0-3. It was suggested that the book Physical biology of the cell may be used to cover 50% of the course
	BBL132	BBLXXX	Microbiology	Cell Biology	3	0	2	4	Earlier credit structure was 3-0-3. To be renamed Cell Biology (where both microbial (prokaryotic) and eukaryotic cell biology is taught.
	BBL231	BBLXXX	Molecular Biology and genetics	Molecular biology	2	0	2	3	Earlier credit structure was 3-0-3. Removal of the genetics component from this course.
	BBL434	NO CHANGE	Bioinformatics	NO CHANGE	2	0	2	3	
	BBL733	NO CHANGE	Recombinant DNA Technology	NO CHANGE	2	0	2	3	Earlier credit structure was 2-0-3
	BBLXXX		New Course	Biomolecular Chemistry/ Biomolecules	3	0	0	3	New course
								19	
				Total				**65**	
	BBD451		**BTP**		0	0	6	3	
				Grand total				**68**	