

Department of Biochemical Engineering and Biotechnology

Minutes of the Departmental Faculty Board Meeting (DFB-09/2019-2020)

March 08, 2020

The ninth meeting of the *Departmental Faculty Board* for the academic session 2019-2020 was held on **Friday, March 06, 2020 at 3:00 PM** in the Departmental Committee Room (I-230).

The following members were present:

Prof. D. Sundar	Chairman
Prof. Saroj Mishra	Member
Prof. Ashok Srivastava	Member
Prof. Prashant Mishra	Member
Prof. Atul Narang	Member
Prof. Shilpi Sharma	Member
Prof. Preeti Srivastava	Member
Prof. Ziauddin Shaikh Ahammad	Member
Prof. Lucinda E. Doyle	Member
Prof. Rohan Jain	Member
Prof. Ishaan Gupta	Member
Prof. Ritu Kulshreshtha	Convener

1. Confirmation of the minutes of 8th meeting of the DFB for the session 2019-2020 held on February 06, 2020.

The minutes of the meeting were confirmed as circulated.

2. Matters arising out of the minutes.

- The Board was informed that Prof. G.P. Agarwal has handed over the keys for lab I-127 and Prof. Lucinda E. Doyle could now get the lab reorganized as per the decision taken earlier.
- The Board noted that the handing over of lab I-25 by Prof. A.K. Srivastava has not yet been completed and the matter was still unresolved.
- The Board was informed by the Head that furniture requirements for different labs in the new building 99C1 would be worked out by the Consultants, who will be visiting the Department on March 11, 2020. The Head's office will coordinate the visit and inform the faculty accordingly.

3. Courses to be floated in Semester 1, 2020-2021

The courses to be floated in Semester 1, 2020-2021 was finalized by the board as given in ***Annexure I***.

3. Recruitment of Technical Staff (Senior Lab Assistant – SLA)

Prof. Preeti Srivastava and Prof. Atul Narang presented the format of the exam to be conducted for SLA selections March 16, 2020. The board requested them to organize all the requirements to conduct the theory/lab exams and keep them ready by Thursday, March 12, 2020.

4. Budget for next FY 2020-2021

Before discussing the budget proposal for next FY 2020-2021, the board was apprised of the following:

- The Head expressed his serious concerns about the delay in PLN03 purchases made during the current FY, resulting in more than Rs. 50 Lakh worth purchases that are still pending to be settled with the accounts. This has already attracted serious objections from P&S Section and the audit. It is extremely important that all the pending bills are settled well in time to account for being booking in the budget for current FY ending on March 31, 2020. It was also informed by the Head that more than Rs. 1 lakh worth committed expense in NPN05 and PLN03F are yet to be settled by respective buyers.
- All the faculty buyers were requested to give topmost priority to close the settlement within the next 10 days.
- The Head informed the board that starting FY 2020-2021, all the purchases need to be initiated in April itself, so that the rush of expenditure, particularly in the closing months of the financial year, could be avoided.

The Board discussed the budget proposal for PLN03 and NPN05 and finalized it as given in **Annexure 2**.

5. Discussion on Class Committee meetings

A series of Class Committee Meetings for the academic session Semester 1, 2019- 2020 were organized for different batches during March 02-06, 2020 in the Departmental and the minutes of these meetings are given in **Annexure 3**.

The Board noted the concerns of the students and planned to incorporate the suggestions related to the slot change/Introduction of new courses/dropping of courses during the next curriculum revision in 2023. It was also decided that concerns related to the individual courses would be conveyed to the concerned faculty for their consideration.

6. Matters for information of the board.

- a) The Head informed the Board that Prof. Ashish Misra is currently visiting Lawrence Berkeley National Laboratory, CA, USA as part of his 'Bioenergy-Awards for Cutting Edge Research (B-ACER) Fellowship, supported by DBT and IUSSTF, during February 27 - July 24, 2020.
- b) The board was informed that the tenure of the Institute Postdoctoral Fellow Dr. K. Senthilguru has been extended by one more year and a new Institute Postdoctoral Fellow Dr. Kartik Aiyer, who will work under the mentorship of Prof. Lucinda E. Doyle, will be joining the department on April 01, 2020.

7. Any other item with the permission of the Chair

- a) The Board discussed the request made by Prof. R. Kulshreshtha and Prof. I. Gupta for establishing a shared mammalian culture facility in the new building 99C1. It was noted that there is no such provision for a shared culture facility within the allocated departmental space in the new building. The board suggested that the faculty may approach the Institute for allocation of extra space to establish such a facility.

- b) Prof. Preeti Srivastava shared the draft of the Biosafety Poster related to the code of practice to be followed by the Department (**Annexure 4**). The faculty were requested to share their feedback for the same latest by March 16, 2020.
- c) Prof. Rohan Jain presented the draft of the DBEB Information brochure for attracting prospective students to the PhD program. The faculty were requested to provide their feedback, if any.

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

Ritu Kulshreshtha
Convener, DFB

Distribution

All Faculty (by email)

Courses to be floated in Semester 1, 2020-2021

Departmental Core Courses (DC)

SI	Course Number	Course Title	L - T - P Structure			Credits	Course Coordinator	Slot
			L	T	P			
1	BBL131	Principles of Biochemistry	3	0	3	4.5	PM	D
2	BBL132	General Microbiology	3	0	3	4.5	SS	F
3	BBL133	Mass and Energy Balances in Biochemical Engineering	3	0	0	3	SN	H
4	BBL231	Molecular Biology and Genetics	3	0	3	4.5	PS	D
5	BBL331	Bioprocess Engineering	3	0	0	3	ZAS	B
6	BBP332	Bioprocess Engineering Lab	0	0	3	1.5	ZAS	P
7	BBL731	Bioseparation Engineering	3	0	3	4.5	RJ	C
8	BBL732	Bioprocess Plant Design	3	0	2	4	TRS	B
9	BBL733	Recombinant DNA Technology	2	0	3	3.5	RK	D
10	BBQ301	Seminar Course – I	0	0	2	1	DS (HoD)	P
11	BBQ302	Seminar Course - II	0	0	2	1	DS (HoD)	P
12	BBD351	Design – NGU	0	0	2	1	AM	
13	BBD451	Major Project Part 1 (BB1)	0	0	6	3	RE	
14	BBN101	Introduction to Biochemical Engg	0	0	2	1	DS (HoD)	M

Program Core Courses (PC)

SI	Course Number	Course Title	L - T - P Structure			Credits	Course Coordinator	Slot
			L	T	P			
1	BBL734	Metabolic Regulation & Engg	3	0	0	3	AM	H
2	BBL735	Genomics and Proteomics	2	0	2	3	IG	D
3	BBL737	Instrumentation and Analytical Methods in Bioengineering	2	0	2	3	DS (HoD)	E
4	BBD851	Major Project Part 1 (BB5)	0	0	12	6	RK	
5	BBD852	Major Project Part 2 (BB5)	0	0	28	14	RK	
6	BBD853	Major Project Part 1 (BB5)	0	0	8	4	RK	
7	BBD854	Major Project Part 2 (BB5)	0	0	32	16	RK	

Program Elective Courses (PE)

SI	Course Number	Course Title	L - T - P Structure			Credits	Course Coordinator	Slot
			L	T	P			
1	BBL741	Protein Science & Engineering	3	0	0	3	SM	H
2	BBL754	Optics with Life Sciences	3	0	0	3	RE	F

MSR/PhD Courses

SI	Course Number	Course Title	L - T - P Structure			Credits	Course Coordinator	Slot
			L	T	P			
1	BED800	Major Project	0	0	80	40	RJ	
2	BBD895	Major Project	0	0	72	36	RJ	
3	BBL830	Microbial Biochemistry	3	0	0	3	LED	J

Requests received for purchase of TEACHING EQUIPMENTS under PLN03 (Capital Assets) for the FY 2020-2021

SI	Name of Equipment	Amount (in lacs)	Course	No. of Students	Lab name and Location	Proposer	Budgetary Quote
1	MiniON Starter Pack MiniON Sequencing	2.3	BBL735	20	UG lab (I-30)	IG	Ishaan-BBL735-Lab-Quotation-QNT-245379
2	Flongle Intro pack	2.3	BBL735	20	UG lab (I-30)	IG	Ishaan-BBL735-Lab-Quotation-QNT-245379
3	Vacuum Filtration	1.3	BBL731		UG lab (I-30)	RJ	BBL731-requirement pumps_RJ
4	Membrane Filter assembly glass	1.1	BBL731		UG lab (I-30)	RJ	QUOTATION-Vacuum filtration_RJ
5	pH adjustment Pump	4.8	BBL731		UG lab (I-30)	RJ	Quotation of peristaltic pumps_RJ
6	Other equipments	10.0	Many courses		UG lab (I-30)		
8	New + Spare parts for lab equipments	25.0			Instrumentation lab (I-231)		
14	Spare parts for bioreactors	10.0	BBL332, BBL850	90	Bioprocess lab (I-103)		
25	Gel Doc	6.7	Shared Facility		For 99C1	RE	RE_Common Instruments for 99C (1)
26	Multi-mode plate reader	25.0	Shared Facility		For 99C1	RE	RE_Common Instruments for 99C (1)
27	Nanodrop	8.0	Shared Facility		For 99C1	RE	RE_Common Instruments for 99C (1)
28	-80 Freezer	5.0	Shared Facility		For 99C1	RE	RE_Common Instruments for 99C (1)
31	Gel doc system	6.8	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
32	Minus 80 Freezer	4.9	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
33	Minus 20 Freezer	0.3	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
34	4 Degree Chiller	1.3	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
35	Gel electrophoresis	1.7	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
36	3D Printer	0.6	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
37	Autoclave	0.9	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
38	Large Centrifuge	1.3	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
39	Microcentrifuge	4.4	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
40	Mini vortex	0.2	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
41	Thermocycler	0.9	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
42	Workstation	3.0	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
43	Western blot protein transfer system	0.7	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
44	Gel rocker	0.4	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
45	Incubator	0.6	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
46	Rotary Shaker	0.2	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
47	Vacuum Filtration Unit	0.2	Research		LED and IG Labs (I-127)	LED and IG	LED IG Lab Requests for FY 20-21
48	Rohan Jain	10.0	Research		RJ Lab	RJ	

Total	96.4
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Request under NPN05 (OH-31) for the FY 2020-2021

SI	Name of Item	Amount (in lacs)	Course	No. of Students	Lab name and Location	Proposer
1	Chemicals, plasticware, enzymes, etc	2.5	Many courses		UG lab (I-30)	PS/RJ
3	AMC for HPLC (4 Agilent, 1 Shimadzu, 2 Waters)	2.1	Shared Facility		Instrumentation lab (I-231)	
4	AMC for GC	0.3	Shared Facility		Instrumentation lab (I-231)	
5	AMC for LC-MS	2.0	Shared Facility		Instrumentation lab (I-231)	
4	Repair and Maintenance	15.0	Shared Facility		Instrumentation lab (I-231)	
5	Repair and Maintenance	5.0	Shared Facility		Bioprocess lab (I-103)	
7	Repair / Maintenance and PG Research	20.0			all research labs	
8	Department Operational expenses	2.0			HoD's office	HoD
9	PhD/MSR/MTech Examiner Fee, Guest House, etc	1.0			HoD's office	HoD

Total	49.9
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Department of Biochemical Engineering and Biotechnology**Class committee meeting of 2015 entry students**

A class committee meeting of 2015 entry students was held on March 6th, 2020.

Following faculty members were present

Prof. D. Sundar	Chairman
Prof. Saroj Mishra	Member
Prof. Ashok K. Srivastava	Member
Prof. Prashant Mishra	Member
Prof. Atul Narang	Member
Prof. Shilpi Sharma	Member
Prof. Preeti Srivastava	Member
Prof. Ziauddin Shaikh Ahammad	Member
Prof. Lucinda E. Doyle	Member
Prof. Rohan Jain	Member
Prof. Ishaan Gupta	Member
Prof. Ritu Kulshreshtha	Convener

Following two students attended the meeting

- a) Nitesh Chaudhary (2015BB50010)
- b) A R Shubham (2015BB50001)

The students raised the following issues:

a) CLL252

The students informed that the outline of the course is not clear and the answer sheets were not shown to the students.

b) MTL102:

The students informed that the course is more abstract in nature and mentioned that the course content is not of much interest to the DBEB students. They proposed that a course related to MATLAB or Numerical methods in biological sciences would be more useful.

c) BBL434:

The students informed about a BBL434 course and the Data structure course being floated in the same time slot leading to the difficulty faced by the students who want to do both the courses. They requested for a change in the slot of the Data structure course to avoid the clash in the time slots. The Board noted their concern and informed that this may be considered during next curriculum revision.

d) CLP302:

The students informed that both DBEB and Chemical Engg are taking up this course. They informed that the DBEB students felt inadequately prepared to take this course and requested if the Fluid Mechanics part covered in the Department can be taught in more depth.

e) BBL754:

The students discussed their concerns regarding teaching of the BBL754 course. They informed that the slides were unclear and not informative and the students in general felt lack of understanding in the course.

f) The students also showed their concerns regarding the uneven distribution of PEs in both the semesters.

g) MTP (BBD851-854)

The students expressed their concern about the MTP evaluations.

They mentioned that since the presence of Professors varies with student's presentations it leads to inconsistent grading. They requested that all the Professors should be present during all the evaluations. They also asked for objective grading criteria and if the supervisor's grade can be given a higher weightage. They requested that grading for BBD852 and BBD854 must be separate as the time period is not consistent with the time period. They also requested if the date for final MTP evaluation could be according to the academic calendar.

The Board noted their concerns and informed that current practice of averaging of grades given by ALL the faculties attending the presentation will be strictly followed. They also informed that likely there will be three MTP evaluations/per semester that will address their concerns regarding separate grading for students in BBD852 and BBD854 courses. It was decided that all the students in BBD854 course will submit their reports to the Department by 7th July, 2020 and the Department depending on the availability of the external examiners will try to conduct the final presentations by 15th July, 2020.

h) Internships

The students requested that non-core internships should be awarded design credits. However, the Board suggested that an Institute level committee would be constituted to evaluate the non-core internships. They were requested to discuss this with the Dean,...

i) Formation of committee consisting of graduating students to note overall feedback of program.

The Board suggested the graduating students to provide the overall feedback of the program to the Department. They suggested that students can themselves decide regarding the constitution of the student committee for the same.

j). Summer courses should be floated and considered later on at least after 2nd Minor, so as enough time is given to student to decide whether we would have to do any course or not.

The Head suggested that students could approach him for any such requests related to the floating of the summer courses that may be required for completion of the degree requirements for some graduating students.

Department of Biochemical Engineering and Biotechnology

Class committee meeting of 2016 entry students

A class committee meeting of 2016 entry students was held on March 5th, 2020. Following faculty members were present

Prof. D. Sundar (Head of Department)

Prof. Saroj Mishra

Prof. A.K. Srivastava

Prof. Sunil Nath

Prof. Shilpi Sharma

Prof. Ritu Kulshreshtha

Prof. Preeti Srivastava

Prof. Rohan Jain

Prof. Lucinda E. Doyle

Class committee convener Nikhil Shenoy (Entry no. 2016BB10022) attended the meeting. Following issues were discussed:

1. Increase flexibility in choosing courses. Reduce number of core courses thereby giving more choices for choosing department electives. Biochemical Engineering and Biotechnology has the highest number of contact hours and the number of credits. Faculty board agreed that the Department offers several courses which have laboratory component. Hands on experience in laboratory is required for many of these courses and it helps in understanding the concepts better.

2. Courses like statistics, optimization should be introduced when courses like MTL102 is already present. Statistics Optimization are used extensively in every engineering discipline and should be taught. Whereas the concepts used in MTL102 where hardly ever utilized throughout the 4 years.

Head informed that MTL 102 (Differential equations) and MTL 108 (Introduction to Statistics) are already been offered at Institute level, the possibility of offering a such a course by Department will be discussed at the time of curriculum revision.

3. Number of core courses should be reduced in the 7th semester, placement and grades both suffer as a result.

4. CLP302 is based on Mass Transfer 2 which is not in curriculum. Either Mass Transfer 2 should be introduced or CLP302 should be removed from the core courses.

5. Modelling and Simulation needs to be introduced based on feedback. It was discontinued for some reason.

6. There is significant demand for computational courses. (eg like Computational Methods for Biological Modeling and Simulation, Computational Genomics)

7. BTP can be floated in both the semesters (like maths department). People are anyway are not opting for BTP2

Head informed that the above points about floating of courses and introduction of new courses will be discussed separately.

BTP Review :

1. The work that is given to students is non uniform. Some students have more hands on work whereas some students have work that involves more of reading research papers. In the latter case, professors generally ask as to what work the student has done and the students end up suffering because there was no such expectation from the supervisor.

2. Grading metric can be changed and there should be some level of normalization.

Faculty board informed the convener that BTP cannot be mere reading of research papers. A critical analysis of the literature and some hands on work is the minimum that is expected from the students.

Department of Biochemical Engineering and Biotechnology

Class committee meeting of 2017 entry students

A class committee meeting of 2017 entry students was held on March 4th, 2020. Following faculty members were present

Prof. D. Sundar (Head of Department)

Prof. Saroj Mishra

Prof. A.K. Srivastava

Prof. Shilpi Sharma

Prof. Ritu Kulshreshtha

Prof. Preeti Srivastava

Prof. Ravikrishnan Elangovan

Prof. Rohan Jain

Prof. Lucinda E. Doyle

Prof. Ishaan Gupta

Class committee convener Aryan Jain (Entry no. 2017BB10008) attended the meeting. Following issues were discussed:

1) Students going for foreign exchange

The convener informed that for foreign exchange, students have the choice to go in the 5th or 6th semester. Head informed that a student planning to go for foreign exchange should plan his courses for the coming semesters and submit that plan to the Department before applying for foreign exchange.

2) slot change for BBL131

There was a request to change the slot of BBL131. Head informed that BBL131 is a core course and as per Institute norms slot change will not be possible for core courses.

3) Training and Placement

The convener informed that for students going for internship in 2nd year, in consultation with the coordinator Training and Placement cell, the resume and names of students have been compiled. This list of students along with their resume will be circulated to a selected list of Professors/Universities who had accepted students in the past.

The convener further informed that they are planning to organize visits to industries located in Delhi NCR as part of BETA club. Head recommended that a half day workshop may be organized in consultation with Prof. Ritu Kulshreshtha, Prof. Ravi Elangovan and Prof. Lucinda E. Doyle where experts from industry as well as Academia may be invited. Head informed that such a workshop will also give them an opportunity to interact with experts.

Department of Biochemical Engineering and Biotechnology

Class committee meeting of 2018 entry students

A class committee meeting of 2018 entry students was held on March 3rd, 2020. Following faculty members were present

Prof. D. Sundar (Head of Department)

Prof. Saroj Mishra

Prof. A.K. Srivastava

Prof. Sunil Nath

Prof. Shilpi Sharma

Prof. Ritu Kulshreshtha

Prof. Preeti Srivastava

Prof. Ravikrishnan Elangovan

Prof. Rohan Jain

Prof. Lucinda E. Doyle

Prof. Ishaan Gupta

Class committee convener Shrajay Dixit (Entry no. 2018BB50063) attended the meeting.

Feedback on Academics:

Students rated academics as **4.7** on a scale of **5**

Requests

a) BBL231 (Molecular biology and genetics) 3-0-3 (4.5 credits)

Students requested to shift the course of molecular biology in the fourth semester, so that they can apply for various industrial or research internships in the summer break. Currently, the course is offered in the fifth semester.

Head informed that it will be considered in 2023 at the time of curriculum revision.

b) If possible, leave slots for the open electives in sophomore and junior-undergraduate years.

The curriculum and the scheduling of courses was discussed and Head apprised that it will not be possible

c) overlap of SBL100 with other Departmental courses

The class representative informed that there is considerable overlap between SBL100 and our Departmental courses. Since, it was not reflected in the course template of SBL 100, the board requested the convener to share the class notes/slides.

Department of Biochemical Engineering and Biotechnology

Class committee meeting of 2019 entry students

A class committee meeting of 2019 entry students was held on March 2nd, 2020. Following faculty members were present

Prof. D. Sundar (Head of Department)

Prof. Saroj Mishra

Prof. Sunil Nath

Prof. Shilpi Sharma

Prof. Ritu Kulshreshtha

Prof. Preeti Srivastava

Prof. Ravikrishnan Elangovan

Following two students attended the meeting

Ms Yukti Makhija (Entry No. 2019BB10067)

Mr. Shivan Jaglan (Entry no. 2019BB10053)

The students raised the following issues:

- a) PYP 100 (Physics laboratory) 0-0-4 (2 credits)
The students informed that theory/basic principle behind each experiment was not taught and therefore they had problems in viva.
- b) APL100 (Engineering Mechanics) 3-1-0 (4 credits)
Students informed that tutorial in this course was too difficult to follow, although the pdf file containing answers was uploaded but they were not discussed in the class.
- c) NLN100 (Language and writing skills) 0-0-2 (Non-graded)
Students mentioned that they were asked to write articles/term papers which were never evaluated. Also, students who were not fluent in speaking English were not comfortable in speaking in groups and therefore it was demotivating for them due to which they stopped attending the classes.
- d) NEN100 (Professional ethics and social responsibility) 0-0-1 (Non-graded)
Students informed that classes were not well planned for this course, content in the class was not known beforehand. Head informed that this course is flexible and the content is up to the faculty to decide.



Department of Biochemical Engineering and Biotechnology

Code of practice

DOS

- The laboratory should be kept neat and clean.
- Decontaminate work surface at least once a day and after any spills.
- Wash your hands thoroughly before leaving the laboratory.
- Handle human/animal blood, body fluids, tissues, cell lines inside a level II biosafety cabinet.
- Use personal protectives such as lab coat, helmet, toe covered shoes, gloves, protective glasses to minimize the risk of splashes.
- Eyes must be flushed for at least 15 minutes in case of contact.
- Segregate the biohazard waste properly as described in biosafety manual.
- All spills, accidents and overt or potential exposures to infectious materials should be reported immediately to the laboratory supervisor.



DON'TS

- Mouth pipetting should be prohibited.
- Do not touch mouth, eyes and face with contaminated hands.
- Eating, drinking, and applying cosmetics should not be permitted in the laboratory work area.
- Laboratory clothing should not be worn in non laboratory areas; contaminated clothing should be disinfected by appropriate means.



AVOID TOUCHING YOUR EYES, NOSE OR MOUTH

