

UNIVERSITY OF JAMMU

Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

No. F.Acd./II/19/5757-5771

Dated: 26-9-2019

Subject: -- **Minutes of the Meeting of Board of Studies in Biotechnology
in the Faculty of Life Sciences.**

Sir/Madam,

Please find enclosed the copy of the minutes of the meeting of the Board of Studies in Biotechnology in the faculty of Life Sciences held on 18.12.2018 duly approved by the Vice-Chancellor for your information and further necessary action.

The Minutes of the Board of Studies in Biotechnology is available on the University website: www.jammuuniversity.in

Thanking you,

Yours faithfully,


Section Officer (Academic)

Encl: - As above

Copy to:-

1. Sr. P.A.to the Dean Academic Affairs.
2. Sr.P.A.to the Controller of Examination along with minutes of the meeting.
3. Assistant Registrar (Confidential)


25/9/2019

Minutes of the Board of Studies meeting held on 18th December, 2018 at 11.00 a.m. in the School of Biotechnology, University of Jammu.

Members present:-

1. Prof. Jyoti Vakhlu, Director, School of Biotechnology,	Convener
2. Dr. B.K. Bajaj, Associate Professor, SBT	Member
3. Dr. Sanjana Kaul, Associate Professor, SBT	Member
4. Dr. Jasbir Singh, Asstt. Prof. GDC, Poonch	Member
5. Mr. Shabir Hussain, Asstt. Prof. GDC, Rajouri	Member
6. Mr. Samir Chadha, Asstt. Professor GDC Boys, Udhampur	Member
7. Ms. Neha Mahajan, Asstt Professor, GDC, Kathua	Member
8. Mr. Kaurab Singh, Asstt. Prof. GDC Reasi	Member
9. Dr. Rahul Sharma, Asstt. Professor, GGMS College, Jammu	Special Invitee
10. Ms. Kiran Bala, Asstt. Professor, GCW, Gandhi Nagar, Jammu	Special Invitee
11. Mr. Ashok Kumar, Asstt. Prof. GCW, Gandhi Nagar, Jammu	Special Invitee
12. Dr. Madhulika Bhagat, Sr. Asstt. Professor, SBT	(Co-opted)
13. Dr. Ritu Mahajan, Sr. Asstt. Professor, SBT	(Co-opted)
14. Dr. Nisha Kapoor, Sr. Asstt. Professor, SBT	(Co-opted)

Item No:-1. To confirm the minutes of the meeting of the Board of Studies in Biotechnology held on 30-05-2017 (already circulated).

Minutes of the meeting of the Board of Studies held on 30-05-2017 were confirmed.

Item No:-2. To review the syllabus for Master's Degree Programmes offered by the School (M. Sc Biotechnology, Microbiology and Biochemistry – 1st to 1Vth semester)

The Board of Studies reviewed the syllabi of all the three programmes i.e. M. Sc Biotechnology, Microbiology and Biochemistry from 1st to 4th semesters and following revisions were made:

1. IPR course already running in 3rd semester of M. Sc Biotechnology will now onwards be offered to M.Sc Microbiology and M.Sc Biochemistry programme students also. The final draft of the new syllabus will be prepared by Dr. Yash Paul Khajuria taking into the consideration all the suggestions made.
2. **Modification in the syllabus of Bioinformatics and Biostatistics (4 credits)** - The BOS discussed the syllabus of Bioinformatics and Biostatistics (4 credits) offered in semester 3rd to all the three disciplines. The members were of the opinion that the course should be remodeled and should be bifurcated into theory and laboratory course of 2 credits each instead of present scheme of 4 credits of theory course only. Dr. Nisha Kapoor was asked to prepare the modified syllabus for theory (2 credits) and also prepare the list of practicals to be offered in the laboratory course of the said course. The existing course Bioinformatics and Biostatistics (course code PSBTTC303) will be switched off and the new course will be given the course codes PSBTTC308 / PSMBTC310/ PSBCTC311 for Biotechnology, Microbiology and Biochemistry respectively.
3. The BOS also discussed the research project allotted to the students of 4th semester in M. Sc Biotechnology, Microbiology and Biochemistry and decided that the credit value be reduced from 10 credits to 08 credits with change of Course code PSBTDC406, PSMBDC408 and PSBCDC406 for M.Sc Biotechnology, Microbiology and Biochemistry respectively so as to

accommodate new courses. This will be implemented to the students admitted from session 2019.

4. The Board of Studies members have decided to reduce / increased the credit value of laboratory courses in M.Sc Biotechnology/M.Sc Microbiology/M.Sc Biochemistry each.

Programmes	Semester	Existing Course codes with credits	Changed Course Codes with credits
Biotechnology	3 rd	i.PSBTPC305 - Laboratory course in Plant Biotechnology (3 credits)	i. PSBTPC312 (2 credits)
		ii. PSBTPC306 - Laboratory course in Bioprocess Engineering (3 credits)	ii. PSBTPC313 (2 credits)
Microbiology	3 rd	i.PSMBPC305 - Laboratory course in Mycology and Food Microbiology (3 credits)	i. PSMBPC314 (4 credits)
		ii.PSMBPC306 - Laboratory course in Bioprocess Engineering (3 credits)	ii. PSMBPC312 (2 credits)
Biochemistry	3 rd	i.PSBCPC305 - Laboratory course in Plant Biochemistry (3 credits)	i. PSBCPC313 (2 credits)
		ii.PSBCPC306 Laboratory course in Bioprocess Engineering (3 credits)	ii. PSBCPC314 (2 credits)

M.Sc. Biotechnology

Total Credits : 98

Semester I

COURSE CODE	PAPER	CREDITS
PSBTTC101	Cell Biology	4
PSBTTC102	General & Applied Microbiology	4
PSBTTC103	Biochemistry & Metabolism	4
PSBTTC104	Molecular Biology	4
PSBTPC105	Laboratory course in General & Applied Microbiology and Cell Biology	4
PSBTPC106	Laboratory course in Biochemistry & Metabolism and Molecular Biology	4
TOTAL		24

STUDENTS WILL REGISTER FOR A MINIMUM OF 2 CREDIT COURSE FROM SWAYAM

Semester II

COURSE CODE	PAPER	CREDITS
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PSBTTC201	Genetic Engineering	4
PSBTTC202	Enzymology	4
PSBTTC203	Genetics	2
PSBTTC204	Molecular Virology	2
PSBTTC205	Immunology	4
PSBTTC208	Term paper	1
PSBTTC206	Laboratory course in Genetic Engineering and Enzymology	4
PSBTTC207	Laboratory course in Genetics and Immunology	4
TOTAL		25

Semester III

COURSE CODE	PAPER	CREDITS
PSBTTC301	Plant Biotechnology	4
PSBTTC302	Bioprocess Engineering	4
PSBTTC308	Bioinformatics & Biostatistics	2
PSBTTC304	IPR	2
PSBTTC310	Nanotechnology in Biology	2
PSBTTC309	Review Paper writing	1
PSBTTC312	Laboratory course in Plant Biotechnology	2
PSBTTC311	Laboratory course in Bioinformatics	2
PSBTTC313	Laboratory course in Bioprocess Engineering	2
TOTAL		21

Students will register for a minimum of 4 credits of course from other Departments of the University

Semester IV

COURSE CODE	PAPER	CREDITS
PSBTDC406	Research Project+Project presentation+Viva-Voce+Dissertation	8
PSBTDC402	Journal Club	2
PSBTTC403	Animal Biotechnology	4
PSBTTC404	Environmental Biotechnology	4
TOTAL		18

Students will register for a minimum of 4 credits of course from other Departments of the University

Open courses offered by the School:-

1. Techniques in Biotechnology 4 Credits (To 3rd Sem students)
2. Essentials in Microbiology and Biochemistry 4 Credits (To 4th Sem students)

M.Sc. Microbiology

Total Credits : 100

Semester I

COURSE CODE	PAPER	CREDITS
PSMBTC101	Cell Biology	4
PSMBTC102	Bacteriology and Virology	4
PSMBTC103	Biochemistry & Metabolism	4
PSMBTC104	Molecular Biology	4
PSMBPC105	Laboratory course in Bacteriology and Virology and Cell Biology	4
PSMBPC106	Laboratory course in Biochemistry & Metabolism and Molecular Biology	4
TOTAL		24

STUDENTS WILL REGISTER FOR A MINIMUM OF 2 CREDIT COURSE FROM SWAYAM

Semester II

COURSE CODE	PAPER	CREDITS
PSMBTC201	Genetic Engineering	4
PSMBTC202	Enzymology	4
PSMBTC208	Microbial Genetics	2
PSMBTC204	Molecular Virology	2
PSMBTC205	Immunology	4
PSMBTC210	Term Paper	1
PSMBPC206	Laboratory course in Genetic Engineering and Enzymology	4
PSMBPC209	Laboratory course in Microbial Genetics and Immunology	4
TOTAL		25

Semester III

COURSE CODE	PAPER	CREDITS
PSMBTC301	Mycology and Phycology	4
PSMBTC302	Food Microbiology	2
PSMBTC303	Bioprocess Engineering	4
PSMBTC310	Bioinformatics & Biostatistics	2
PSMBTC308	IPR	2
PSMBTE309	Nanotechnology in Biology	2
PSMBTC311	Review Paper writing	1
PSMBPC314	Laboratory course in Mycology and Phycology and Food Microbiology	4
PSMBPC312	Laboratory course in Bioprocess Engineering	2
PSMBPC313	Laboratory course in Bioinformatics	2
TOTAL		25

Students will register for a minimum of 4 credits of course from other Departments of the University

Semester IV

COURSE CODE	PAPER	CREDITS
PSMBDC408	Research Project+Project presentation+Viva-Voce+Dissertation	08
PSMBDC402	Journal Club	2
PSMBTC406	Environmental Microbiology	2
PSMBTC404	Medical Microbiology	4
PSMBPC407	Laboratory course in Environmental microbiology	2
TOTAL		18

Students will register for a minimum of 4 credits of course from other Departments of the University

Open courses offered by the School:-

1. Techniques in Biotechnology 4 Credits (To 3rd Sem students)
2. Essentials in Microbiology and Biochemistry 4 Credits (To 4th Sem students)

M.Sc. Biochemistry

Total Credits : 100

Semester I

COURSE CODE	PAPER	CREDITS
PSBCTC101	Cell Biology	4
PSBCTC102	Biophysical and Bio-organic chemistry	4
PSBCTC107	Biomolecules	4
PSBCTC104	Molecular Biology	4
PSBCPC105	Laboratory course in Cell biology and Biophysical and Bio-organic chemistry	4
PSBCPC108	Laboratory course in Biomolecules and Molecular Biology	4
TOTAL		24

STUDENTS WILL REGISTER FOR A MINIMUM OF 2 CREDIT COURSE FROM SWAYAM

Semester II

COURSE CODE	PAPER	CREDITS
PSBCTC201	Genetic Engineering	4
PSBCTC202	Enzymology	4
PSBCTC203	Genetics	2
PSBCTC204	Molecular Virology	2
PSBCTC205	Immunology	4
PSBCTC208	Term paper	1
PSBCPC206	Laboratory course in Genetic Engineering and Enzymology	4

PSBCPC207	Laboratory course in Genetics and Immunology	4
TOTAL		25

Semester III

COURSE CODE	PAPER	CREDITS
PSBCTC301	Plant Biochemistry	4
PSBCTC302	Intermediary Metabolism	4
PSBCTC311	Bioinformatics & Biostatistics	2
PSBCTC308	Mammalian hormones	2
PSBCTC309	IPR	2
PSBCTE310	Nanotechnology in Biology	2
PSBCTC312	Review Paper writing	1
PSBCPC313	Laboratory course in Plant Biochemistry	2
PSBCPC314	Laboratory course in Intermediary Metabolism	2
PSBCPC315	Laboratory course in Bioinformatics	2
TOTAL		23

Students will register for a minimum of 4 credits of course from other Departments of the University

Semester IV

COURSE CODE	PAPER	CREDITS
PSBCDC406	Research Project+Project presentation+Viva Voce+Dissertation	8
PSBCDC402	Journal Club	2
PSBCTC403	Nutritional Biochemistry	4
PSBCTC404	Clinical Biochemistry	4
TOTAL		18

Students will register for a minimum of 4 credits of course from other Departments of the University

Open courses offered by the School:-

1. Techniques in Biotechnology
2. Essentials in Microbiology and Biochemistry

4 Credits (To 3rd Sem students)
4 Credits (To 4th Sem students)

Item No:-3. To review the syllabus of B.Sc Biotechnology

The Board of Studies thoroughly reviewed and discussed the Scheme of B.Sc Biotechnology at undergraduate level under Choice Based Credit System and made few modifications. The modified scheme is attached. Ms. Neha Mahajan, Asstt. Professor, GCD Kathua and Dr. Kiran Bala, Asst. Professor, GCW, Gandhi Nagar were made Coordinator for the Course Scheme.

Further, resolved that the existing syllabi of Biotechnology under Choice Based Credit System at Undergraduate level will continue for the re-appear/failure candidates for two years.

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Fresh and Modified Scheme of Courses in B.Sc Biotechnology at Undergraduate level under (Choice Based Credit System)

Semester	Course No.	Title	Credits	Nature of Course	% change (Theory/ Practical)
I	UBTTC101	Biochemistry and Cell Biology	4	CORE	17%
	UBTPC102	Biochemistry and Cell Biology	2	CORE (Practical)	15%
II	UBTTC201	Microbiology and Genetics	4	CORE	70%
	UBTPC202	Microbiology and Genetics	2	CORE (Practical)	30%
III	UBTTC301	Molecular Biology and Bioinformatics	4	CORE	40%
	UBTPC302	Molecular Biology and Bioinformatics	2	CORE (Practical)	50%
	UBTTS303	Bioprocess Technology and Environmental Biotechnology	2	Skill Enhancement	65%
	UBTPS304		2	Skill Enhancement (Practical)	
IV	UBTTC401	Genetic Engineering and Plant Biotechnology	4	CORE	No change
	UBTPC402	Genetic Engineering and Plant Biotechnology	2	CORE (Practical)	No change
	UBTTS403	Medical Biotechnology	2	Skill Enhancement	100%
	UBTPS404		2	Skill Enhancement (Practical)	
V	UBTTE501	Animal Biotechnology and Immunology	4	DSE/GE*	40%
	UBTPE502	Animal Biotechnology and Immunology	2	DSE/GE* (practical)	100%
	UBTTS503	Bioinformatics	2	Skill Enhancement	65%
	UBTPS504		2	Skill Enhancement (Practical)	
VI	UBTTE601	Enzymology and Bioprocess Engineering	4	DSE/GE*	100%
	UBTPE602	Enzymology and Bioprocess Engineering	2	DSE /GE* (Practicals)	100%

UBTTS603	Instrumentation and Analytical Techniques	2	Skill Enhancement	50%
UBTPS604		2	Skill Enhancement (Practical)	

Detailed deliberations of the Scheme

SEMESTER 1. The courses offered in 1st semester remain unchanged and is continued.

SEMESTER 2. Introduction of Core course Microbiology and Genetics (course code UBTTTC201) for 4 credits alongwith laboratory course based on Microbiology and Genetics for 2 credits (Course Code UBTPC202) in 2nd semester.

Already existing Microbiology and Enzymology (UBTTTC201) for 4 credits alongwith laboratory course based on Microbiology and Enzymology (UBTPC202) will be switched off.

SEMESTER 3. Introduction of Core course Molecular Biology and Bioinformatics (course code UBTTTC301) for 4 credits alongwith Laboratory course based on Molecular Biology and Bioinformatics for 2 credits (Course Code UBTPC302) in 3rd semester. Members also decided to introduce one Skill Enhancement course i.e Bioprocess Technology and Environmental Biotechnology UBTTS303. This course will have a practical course of 2 credits UBTPS304.

It was decided that already existing Microbiology and Enzymology (Course code UBTTTC301) of 4 credits alongwith its laboratory course based on Microbiology and Enzymology (Course Code UBTPC302) of 2 credits will be switched off. Also the existing Skill Enhancement course Bioprocess Technology (course code UBTTS303) will be switched off.

SEMESTER 4. Already existing Core course, Genetic Engineering and Plant Biotechnology for 4 credits (Course Code UBTTTC401) alongwith its laboratory course based on Genetic Engineering and Plant Biotechnology (UBTPC402) remains unchanged and is continued.

Introduction of Skill Enhancement course Medical Biotechnology (course code UBTTS403/ UBTPS404) for 4 credits (bifurcated of 2 credits theory + 2 credits practical) in 4th semester. The already existing course Medical Microbiology (course code UBTTS403) will be switched off.

SEMESTER 5. Introduction of DSE/GE, Animal Biotechnology and Immunology (course code UBTTE501) for 4 credits, alongwith its laboratory course based on Animal Biotechnology and Immunology (course code UBTPPE502) for 2 credits in 5th semester.

The already existing theory course i.e. Virology (Course No. UBTTE502 for 2 credits) will be swapped with practical course Animal Biotechnology and Immunology for 2 credits course code UBTPPE502.

The Skill Enhancement course Bioinformatics (course code UBTTS503 / UBTPS504) for 4 credits remains same, with bifurcation of credits (2 credits theory + 2 credit practical).

SEMESTER 6. Introduction of DSE/GE, Enzymology and Bioprocess Engineering (Course Code UBTTE601) for 4 credits alongwith laboratory course based on Enzymology and Bioprocess Engineering Course code (UBTPPE602) for 2 credits in 6th semester. The Skill Enhancement, Instrumentation and

Analytical Techniques course code UBTTTS603 / UBTPS604 remains same with bifurcation of 4 credits into 2 credits of theory and 2 credits of practical.

Already existing DSE/GE Environmental Biotechnology (Core course UBTTE601) for 4 credits and laboratory course based on Environmental Biotechnology (course code UBTPE602) for 2 credits will be switched off. Also Skill Enhancement, Instrumentation and Analytical Techniques (course code UBTTTS603) will be switched off.

Item No:-4. Formulation of B. Sc Biochemistry at Undergraduate level (only after intimation from CDC Section).

After thorough discussion, the Board of Studies prepared a fresh Scheme of courses to be introduced in B.Sc Biochemistry at UG level. It was decided that Dr. Shabir Hussain, Asstt. Professor, GDC Rajouri would finalize the Scheme and will send to BOS. Further he would also prepare the syllabus of courses based on the contents of the scheme accordingly which will then be implemented in the colleges.

Scheme for Biochemistry at Undergraduate level (Choice Based Credit System) is as under:-

Semester	Course No.	Title	Credits	Nature of Course
I	UBCTC-101	Biomolecules & Enzymology	4	Core
	UBCPC-102	Biomolecules & Enzymology	2	Core (Practicals)
II	UBCTC-201	Cell Biology & Immunology	4	Core
	UBCPC-202	Cell Biology & Immunology	2	Core (Practicals)
III	UBCTC-301	Intermediary Metabolism	4	Core
	UBCPC-302	Intermediary Metabolism	2	Core (Practicals)
	UBCTS-303	Clinical Biochemistry	4	Skill Enhancement
IV	UBCTC-401	Molecular Biology & Bioinformatics	4	Core
	UBCPC-402	Molecular Biology & Bioinformatics	2	Core (Practicals)
	UBCTS-403	Tools and Techniques in Biochemistry	4	Skill Enhancement
V	UBCTE-501	Food /Nutritional Biochemistry	4	DSE/ GE *
	UBCPE-502	Food/Nutritional Biochemistry	2	DSE/ GE * (Practicals)
	UBCTS-503	Recombinant DNA Technology	4	Skill Enhancement
VI	UBCTE-601	Plant Biochemistry & Endocrinology	4	DSE/ GE *

UBCPE-602	Plant Biochemistry & Endocrinology	2	DSE/ GE * (Practicals)
UBCTS-603	Environmental Biochemistry & Toxicology	4	Skill Enhancement

DSE/GE*: Discipline Specific Elective / Generic Elective

Item No:-5. Approval for MOOC's courses offered to Post graduate 3rd semester students in current session and courses offered to the 1st semester students in Nov. 2018.

All the MOOCs courses offered to post graduate students of 3rd semester of year 2018 batch and the courses offered to the 1st semester batch 2019 were approved by BOS. Also BOS passed the resolution that DAC can identify and approve the new courses as and when required and the DAC approved courses will be approved through the BOS. Further it is mandatory for students to take 2 credits MOOC's course to get degree.

Item No:-6. To discuss the proposal and modus operandi for initiation of various Elective, Skill and Core courses under RUSA.

1. BOS decided to introduce two new Elective courses entitled "Nanotechnology in Biology" and "Genomics and Proteomics". Nanotechnology in Biology" of (2 credits) will be introduced in 3rd semester to the students of M. Sc Biotechnology (course code PSBTTE310) / M. Sc Microbiology (course code PSMBTE309) / M. Sc Biochemistry (course code PSBCTE310). It is mandatory to pass these courses but they are non-evaluative. This year only "Nanotechnology in Biology" (2 credits) will be offered to the students of 3rd semester. Dr. Madhulika Bhagat has been appointed as Coordinator for the course "Nanotechnology in Biology" and has been asked to prepare the syllabus.
2. The BOS passed the resolution to introduce a term paper in 2nd semester (1 credit) to M. Sc Biotechnology, Microbiology and Biochemistry which will be evaluative. This will be implemented to the students of batch 2019-21. New course codes for term paper PSBTTC208/ PSMBTC210/ PSBCTC208 will be allotted to M. Sc Biotechnology, Microbiology and Biochemistry programmes respectively.
3. Also BOS decided to introduce "Review Paper Writing" on research topic of dissertation in 3rd semester to the M. Sc Biotechnology (course code PSBTTC309) / Microbiology (course code PSMBTC311) and Biochemistry (course code PSBCTC312). The review paper will be of 1 credit and will be implemented to students of 2019-21 batch and it will be evaluative course.

7. To discuss the Open course offered by department through MOOC's for June, 2019 onward session

BOS discussed about the option of offering open course to the students of School of Biotechnology through MOOCs. Since the decision of University regarding the same is pending, so BOS decided to wait for the final decision to come from higher authorities and in the mean time department will seek permission from DAA to permit the students to opt open elective course through MOOCs.

8. Any other item/s with the permission of the Chair.

- a. The BOS resolved that the course code of Mammalian Hormones (course code PSBCTC307) offered to 3rd semester M.Sc Biochemistry will be changed to PSBCTC308 (as the code was erroneously

b. Courses to be offered under Skill development in PG programme.

The DAC members shortlisted two courses (IPR Entrepreneurship and Medical Diagnostics) to be offered to the students under Skill Enhancement programme from session 2019 onwards.

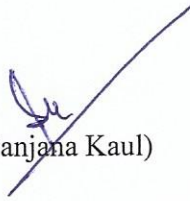
The meeting terminated with a vote of thanks to the Chair.



(Jyoti Vakhlu)



(B.K. Bajaj)



(Sanjana Kaul)


(Jasbir Singh)

(Shabir Hussain)

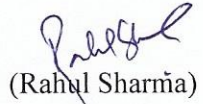


(Samir Chadha)

(Neha Mahajan)



(Kaurab Singh)



(Rahul Sharma)

(Kiran Bala)



(Ashok Kumar)



(Madhulika Bhagat)



(Ritu Mahajan)



(Nisha Kapoor)