

1. Biochemistry

M.Sc. (Biochemistry)

Core Courses

BBC-500	Chemistry of Biomolecules	3(3-0-0)
BBC-510	Biochemical techniques	3(1-0-2)
BBC-530	Enzymology	3(2-0-1)
BBC-640	Intermediary metabolism-I	2(2-0-0)
BBC-641	Intermediary metabolism-II	2(2-0-0)
BBC-600	Master's Seminar	1
Sub Total		14

Basic Supporting Courses (8 credits)

BBM-500	General Microbiology	3(3-0-0)
BMB-535	Techniques in cell Biology	2(0-0-2)
BMB-520	Fundamentals of molecular biology	3(3-0-0)
Sub Total		8

Optional/ Minor Courses (8 credits)

Thesis Research (20 credits)

BBC-690	Master's Thesis Research	20
Total		50

Ph.D. (Biochemistry)

Core Courses (10 credits)

BBC-710	Advanced techniques in Biochemistry	2(0-0-2)
BBC-730	Advanced Enzymology	2(2-0-0)
BBC-740	Advanced Biochemistry and Molecular Biology	3(3-0-0)
BBC-765	Current topics in Biochemistry	1(1-0-0)
BBC-788	Doctoral Seminar-I	1
BBC-789	Doctoral Seminar-II	1
Sub Total		10

Basic Supporting Courses (6 credits)

BMB-540	Molecular Genetics and Breeding	3(3-0-0)
BPS-561	Statistical Method	3(2-0-1)
Sub Total		6

Optional Courses (4 credits)

Minor Courses (10 credits)

Thesis Research (45 credits)

BBC-790	Ph.D. Thesis Research	45
Total		75

Compulsory Courses for Minor for Other Disciplines

BBC-501	General Biochemistry	3(3-0-0)
BBC-505	Basic techniques in Biochemistry	1(0-0-1)
BBC-640	Intermediary metabolism-I	2(2-0-0)
BBC-641	Intermediary metabolism-II	2(2-0-0)

List of Post Graduate Courses of the Department

BBC-500	Chemistry of Biomolecules	3(3-0-0)
BBC-501	General Biochemistry	3(3-0-0)
BBC-505	Basic Techniques in Biochemistry	1(0-0-1)
BBC-510	Biochemical Techniques	3(1-0-2)
BBC-530	Enzymology	3(2-0-1)
BBC-600	Master's Seminar	1
BBC-601	Special Problem	1-2
BBC-620	Food and Nutritional Biochemistry	2(2-0-0)
BBC-640	Intermediary Metabolism I	2(2-0-0)
BBC-641	Intermediary Metabolism II	2(2-0-0)
BBC-645	Plant Biochemistry	3(3-0-0)
BBC-651	Animal Biochemistry	3(3-0-0)
BBC-655	Carbon and Nitrogen Metabolism	2(2-0-0)
BBC-690	Master's Thesis Research	20
BBC-710	Advanced Techniques in Biochemistry	2(0-0-2)
BBC-730	Advanced Enzymology	2(2-0-0)
BBC-740	Advanced Biochemistry and Molecular Biology	3(3-0-0)
BBC-750	Biochemistry and Molecular Probes	2(2-0-0)
BBC-751	Biomembranes	2(2-0-0)
BBC-756	Biochemistry of Biotic and Abiotic Stresses	3(3-0-0)
BBC-760	Functional Genomics, Proteomics and Metabolomics	3(3-0-0)
BBC-765	Current Topics in Biochemistry	1(1-0-0)
BBC-788	Doctoral Seminar-I	1
BBC-789	Doctoral Seminar-II	1
BBC-790	Ph.D. Thesis Research	45

2. Biological Sciences

M.Sc. (Botany)

Core Courses (12 credits)

BBB-500	Plant Diversity I	3(2-0-1)
BBB-501	Plant Diversity II	3(2-0-1)
BBB-525	Angiosperms: Diversity and Resource Utilization	3(2-0-1)
BBB-535	Plant Ecology	2(2-0-0)
BBB-600	Master's Seminar	1
Sub Total		12

Basic Supporting Courses (10 credits)

BPY-501	Principles of Plant Physiology	4(3-0-1)
BBC-501	General Biochemistry	3(3-0-0)
AGP-550	Plant Cytogenetics	3(2-0-1)
Sub Total		10

Optional/ Minor Courses (8 credits)

Thesis Research (20 credits)

BBB-690	Master's Thesis Research	20
Total		50

Ph.D. (Botany)

Core Courses (9 credits)

BBB - 651	Plant Taxonomy	3(2-0-1)
BBB – 705	Plants in Extreme Habitats	2(2-0-0)
BBB – 710	Rhizosphere Biology	2(2-0-0)
BBB - 788	Doctoral Seminar – I	1(1-0-0)
BBB - 789	Doctoral Seminar – II	1(1-0-0)
Sub Total		9

Basic Supporting Courses (7 credits)

BPY-504	Hormonal Regulation of Plant Growth and Development	3(2-0-1)
BPS-661	Experimental Statistics	4(3-0-1)
Sub Total		7

Optional Courses (4 credits)

Minor Courses (10 credits)

Thesis Research (45 credits)

BBB-790	Ph.D. Thesis Research	45
Total		75

Compulsory Courses for Minor for Other Disciplines

BBB-525	Angiosperms: Diversity and Resource Utilization	3(2-0-1)
BBB-535	Plant Ecology	2(2-0-0)

List of Courses of the Department

BBB-500	Plant Diversity – I	3(2-0-1)
BBB-501	Plant Diversity – II	3(2-0-1)
BBB-510	Plant Morphology and Anatomy	2(1-0-1)
BBB-520	Angios. Syste. and Economic Botany	3(2-0-1)
BBB-525	Angiosperms: Diversity and Resource Utilization	3(2-0-1)
BBB-530	Fundamentals of Ecology	3(2-0-1)
BBB-535	Plant Ecology	2(2-0-0)
BBB-540	Plant Embryology	2(1-0-1)
BBB-545	Biology of Plant Reproduction	2(1-0-1)
BBB-599	Mycology	3 (2-0-1)
BBB-600	Master's Seminar	1
BBB-601	Special Problem	2
BBB/	Biodiversity : Concepts and Management Practices	2(2-0-0)
BBE-613		
BBB-615	Advanced Mycology	3 (2-0-1)
BBB-620	Introductory Mycology	3(2-0-1)
BBB-625	Mycology –I	3(2-0-1)
BBB-626	Mycology – II	3(2-0-1)
BBB-630	Myco-Physiology	3(2-0-1)
BBB-651	Plant Taxonomy	3(2-0-1)
BBB-690	Master's Thesis Research	20
BBB-705	Plants in Extreme Habitats	2(2-0-0)
BBB-710	Rhizosphere Biology	2(2-0-0)
BBB-720	Economic Botany	3(3-0-0)
BBB-721	Ethnobotany	2(2-0-0)
BBB-730	Recent Advances in Biosystematics	2(2-0-0)
BBB-750	Plant Molecular Taxonomy	2(2-0-0)
BBB-788	Doctoral Seminar – I	1(1-0-0)
BBB-789	Doctoral Seminar – II	1(1-0-0)
BBB-790	Doctoral Thesis Research	45

3. Chemistry

M.Sc. Chemistry

Core Courses (17 credits)

BPC-531	Organic Chemistry	3(3-0-0)
BPC-623	Advanced Inorganic Chemistry	2(2-0-0)
BPC-631	Mechanism of Organic Reactions	2(2-0-0)
BPC-639	Spectroscopic Methods of Analysis	3(2-0-1)
BPC-641	Physical Chemistry	3(2-0-1)
BPC-651	Analytical Chemistry	3(1-0-2)
BPC-600	Master's Seminar	1
Sub Total		17

Basic Supporting Courses (5 credits)

BBC-501	General Biochemistry-I	3(3-0-0)
BPC-615	Radio Chemistry	2(1-0-1)
Sub Total		5

Optional/ Minor Courses (8 credits)

Thesis Research (20 credits)

BPC-690	Master's Thesis Research	20
Total		50

M.Sc. Ag/ M. Sc. Agricultural Chemicals

Core Courses (16 credits)

BPC-606	Synthetic Agrochemical for Insect and Mite Management	3(2-0-1)
BPC-607	Synthetic Agrochemical for Fungi and Nematode Management	3(2-0-1)
BPC-608	Synthetic Agrochemical for Weed Management	3(2-0-1)
BPC-531	Organic Chemistry	3(3-0-0)
BPC-614	Spectroscopic and Chromatographic Techniques	3(2-0-1)
BPC-600	Master's Seminar	1
Sub Total		16

Basic Supporting Courses (6 credits)

BBC-501	General Biochemistry	3(3-0-0)
APP-506	Principles of Plant Disease management	3(2-0-1)
Sub Total		6

Optional/ Minor Courses (8 credits)

Thesis Research (20 credits)

BPC-690	Master's Thesis Research	20
Total		50

Remedial/ non gradial courses

APP-401	Introductory Plant Pathology	3(2-0-1)	For B. Sc. PCM
BPC-500	General Chemistry	4(3-0-1)	For B. Sc. Ag
APA-607	Mode of Action of Herbicides	3(2-0-1)	For B. Sc. Ag

Ph.D. Agricultural Chemicals

Core Courses (11 credits)

BPC-701	Advances in Agrochemicals	3(2-0-1)
BPC-721	Special Topics in Inorganic Chemistry	2(2-0-0)
BPC-741	Selected Topics in Physical Chemistry	2(2-0-0)
BPC-743	Special Topics in Agrochemicals	2(0-0-2)
BPC-788	Doctoral Seminar-I	1
BPC-789	Doctoral Seminar-II	1
	Sub Total	11

Basic Supporting Courses (4 credits)

BBC-640	Intermediary Metabolism –I	2(2-0-0)
BBC-641	Intermediary Metabolism –II	2(2-0-0)
	Sub Total	4

Optional Courses (5 credits)

Minor Courses for other discipline (10 credits) 10

Thesis Research (45 credits)

BPC-790	Ph.D. Thesis Research	45
	Total	75

Compulsory Courses for Minor for Other Disciplines

Chemistry

BPC-531	Organic Chemistry	3(3-0-0)
BPC-623	Advanced Inorganic Chemistry	2(2-0-0)
BPC-641	Physical Chemistry	3(2-0-1)

Agricultural Chemicals

BPC-606	Synthetic Agrochemical for Insect and Mite Management	3(2-0-1)
BPC-607	Synthetic Agrochemical for Fungi and Nematode Management	3(2-0-1)
BPC-608	Synthetic Agrochemical for Weed Management	3(2-0-1)

Minor courses from department of Biochemistry/ Entomology/ Plant Pathology/ Soil Science etc.

List of Post Graduate Courses of the Department

BPC-500	General Chemistry	4(3-0-1)
BPC-503	Methods of Pesticides Analysis for Quality Control	2(1-0-1)
BPC-504	Formulation Chemistry	2(1-0-1)
BPC-505	Introduction to Agrochemicals	2(2-0-0)
BPC-531	Organic Chemistry	3(3-0-0)
BPC-532	Chemistry of dyes and pigments	3(2-0-1)
BPC-533	Chemistry of Fibers	3(2-0-1)
BPC-534	Preparation and Identification of Organic Compounds	2(0-0-2)
BPC-600	Master's Seminar	1
BPC/	Environmental Chemistry	3(2-0-1)
BBE-602		
BPC-606	Synthetic Agrochemical for Insect and Mites Management	3(2-0-1)
BPC-607	Synthetic Agrochemical for Fungi and Nematode Management	3(2-0-1)
BPC-608	Synthetic Agrochemical for Weed Management	3(2-0-1)
BPC-614	Spectroscopic and Chromatographic Techniques	3(2-0-1)
BPC-615	Radio Chemistry	2(1-0-1)
BPC-616	Use of Radioisotopes in Research	2(1-0-1)
BPC-621	Inorganic Chemistry-I	3(2-0-1)
BPC-622	Inorganic Chemistry-II	2(2-0-0)
BPC-623	Advanced Inorganic Chemistry	2(2-0-0)
BPC-625	Quantitative in Inorganic Analysis	2(1-0-1)
BPC-631	Mechanism of Organic Reactions	2(2-0-0)
BPC-638	Organic Synthesis	3(1-0-2)
BPC-639	Spectroscopic Methods of Analysis	3(2-0-1)
BPC-641	Physical Chemistry	3(2-0-1)
BPC-644	Advance Physical Chemistry	3(3-0-0)
BPC-651	Analytical Chemistry	3(1-0-2)
BPC-653	Green Chemistry	2(2-0-0)
BPC-660	Chemistry of Polymers	3(2-0-1)
BPC-661	Medicinal Chemistry	3(3-0-0)
BPC-690	Master's Thesis Research	20
BPC-701	Advances in Agrochemicals	3(2-0-1)
BPC-702	Research Techniques in Agrochemicals	2(0-0-2)
BPC-703	Recent Advances in Pesticides Formulations	2(2-0-0)
BPC-711	Spectroscopic and Separation Methods	3(3-0-0)
BPC-721	Special Topics in Inorganic Chemistry	2(2-0-0)
BPC-731	Advance Organic Chemistry	2(2-0-0)
BPC-732	Chemistry of Bioactive Natural Products	2(2-0-0)
BPC-741	Selected Topics in Physical Chemistry	2(2-0-0)
BPC-743	Special Topics in Agrochemicals	2(0-0-2)
BPC-788	Doctoral Seminar-I	1
BPC-789	Doctoral Seminar-II	1
BPC-790	Ph.D. Thesis Research	45

4. Environmental Science
M.Sc./M.Sc. (Ag) (Environmental Science)

Core Courses (12 credits)

BBE-500	Physical Environment	2(2-0-0)
BBE-600	Master's Seminar	1
BBE-612	Ecosystem Analysis	3(2-0-1)
BBE 621	Environmental Pollution	2(2-0-0)
BBE-631	Resource and Energy Conservation	2(1-0-1)
BBE-642	Environmental Monitoring	2(1-0-1)

Sub Total 12

Basic Supporting Courses (9 credits)

BPC-602	Environmental Chemistry	3(2-0-1)
BPS-561	Statistical Methods	3(3-0-0)
AAM-650	Remote Sensing Applications in Agriculture	3(2-0-1)

Sub Total 9

Optional/ Minor Courses (9 credits)

9

Thesis Research (20 credits)

BBE-690	Master's Thesis Research	20
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Total 50

Ph.D. (Environmental Science)

Core Courses (9 credits)

BBE-722	Air and Water Pollution	2(2-0-0)
BBE-732	Environmental Waste Utilization	2(2-0-0)
BBE-742	Environmental Impact Assessment and Management	3(2-0-1)
BBE-788	Doctoral Seminar I	1
BBE-789	Doctoral Seminar II	1

Sub Total 9

Basic Supporting Courses (8 credits)

BPC-501	General Biochemistry	3(3-0-0)
BPC-702	Research Techniques in Agro chemistry	2(0-0-2)
BBM-721	Current Topics in Soil Microbiology	2(2-0-0)

Sub Total 7

Optional Courses (4 credits)

4

Minor Courses (10 credits)

10

Thesis Research (45 credits)

BBE-790	Ph.D. Thesis Research	45
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Total 75

Compulsory Courses for Minor for other Disciplines

BBE-612	Ecosystem Analysis	3(2-0-1)
BBE-621	Environmental Pollution	2(2-0-0)

List of Courses of the Department

BBE-500	Physical Environment	2(2-0-0)
BBE-511	Ecophysiology	3(3-0-0)
BBE-513	Social Environment and Human Ecology	2(2-0-0)
BBE-600	Master's Seminar	1
BBE-601	Special Problem	1
BBE/	Environmental Chemistry	3(2-0-1)
BPC- 602		
BBE-611	Environmental Physiology	2(1-0-1)
BBE-612	Ecosystem Analysis	3(2-0-1)
BBE-613	Biodiversity: Concepts and Management Practices	2(2-0-0)
BBE-621	Environmental Pollution	2(2-0-0)
BBE-622	Ecotoxicology	2(1-0-1)
BBE-631	Resource and Energy Conservation	2(1-0-1)
BBE-642	Environmental Monitoring	2(1-0-1)
BBE-644	Experimentation in Environmental Sciences	2(0-0-2)
BBE-645	Biodegradation & Waste Treatment Design	2(2-0-0)
BBE-651	Environmental Biotechnology	2(0-0-0)
BBE-722	Air and Water Pollution	2(2-0-0)
BBE-732	Environmental Waste Utilization	2(2-0-0)
BBE-742	Environmental Impact Assessment and Management	3(2-0-1)
BBE-788	Doctoral Seminar I	1
BBE-789	Doctoral Seminar II	1
BBE-690	Master's Thesis Research	20
BBE-790	Ph.D. Thesis Research	45

5. Mathematics

M.Sc. (Mathematics)

Core Courses

BPM-532	Differential Geometry and Tensors	3(3-2-0)
BPM-533	Topology	3(3-2-0)
BPM-534	Complex Analysis	3(3-2-0)
BPM-536	Abstract Algebra	3(3-2-0)
BPM-635	Functional Analysis	3(3-2-0)
BPM-600	Master's Seminar	1
Sub Total		16

Basic Supporting Courses (8 credits)

TCE-540	Fluid Mechanics	3(2-0-1)
BPS-669	Operations Research	3(3-1-0)
Sub Total		6

Optional/ Minor Courses (8 credits)

8

Thesis Research (20 credits)

BPM-690	Master's Thesis Research	20
Total		50

Ph.D. (Mathematics)

Core Courses (10 credits)

BPM-713	Boundary Value Problems	3(3-2-0)
BPM-731	Advanced Analysis	3(3-2-0)
BPM-732	Integral Transforms and Z-transforms	3(3-2-0)
BPM-737	Special Functions	3(3-2-0)
BPM-788	Doctoral Seminar-I	1
BPM-789	Doctoral Seminar-II	1
Sub Total		14

Basic Supporting Courses (6 credits)

BPS-672	Mathematical Statistics	3(3-1-0)
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Optional Courses (3 credits)

3

Minor Courses (10 credits)

10

Thesis Research (45 credits)

BPM-790	Ph.D. Thesis Research	45
Total		75

M.Sc. (Agricultural Statistics)

Core Courses

BPS-571	Probability Theory and Distributions	2(2-2-0)
BPS-572	Design of Experiments-I	4(2-0-2)
BPS-574	Sampling Techniques-I	3(2-0-1)
BPS-576	Estimation and Statistical Hypotheses Testing	4(3-1-1)
BPS-577	Multivariate Analysis and Official Statistics	3(2-0-1)
BPS-600	Master's Seminar	1
Sub Total		17

Basic Supporting Courses (8 credits)

BPM-501	Linear Algebra and Advanced Calculus	3(3-2-0)
BPM-502	Introduction to Computers and Programming	2(1-0-1)
Sub Total		5

Optional/ Minor Courses (8 credits)

8

Thesis Research (20 credits)

BPS-690	Master's Thesis Research	20
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			Total	50
List of Post Graduate Courses				
(A). Mathematics				
1.	BPM-501	Linear Algebra and Advanced Calculus		3(3-2-0)
2.	BPM-511	Mechanics and Variational Principles		3(3-2-0)
3.	BPM-531	Real Analysis		3(3-2-0)
4.	BPM-532	Differential Geometry and Tensors		3(3-2-0)
5.	BPM-533	Topology		3(3-2-0)
6.	BPM-534	Complex Analysis		3(3-2-0)
7.	BPM-535	Differential Equations		3(3-2-0)
8.	BPM-536	Abstract Algebra		3(3-2-0)
9.	BPM-602	Special functions and Integral Equations		2(2-1-0)
10.	BPM-604	Difference, Differential Equations and Topology		3(3-2-0)
11.	BPM-607	Transformations and Calculus of Variations		2(2-1-0)
12.	BPM-635	Functional Analysis		3(3-2-0)
13.	BPM-681	Mathematical Methods		3(3-1-0)
14.	BPM-711	Mathematical Modeling		3(3-2-0)
15.	BPM-713	Boundary Value Problems		3(3-2-0)
16.	BPM-731	Advanced Analysis		3(3-2-0)
17.	BPM-732	Integral Transforms and Z-transforms		3(3-2-0)
18.	BPM-734	Differentiable Manifolds		2(2-1-0)
19.	BPM-737	Special Functions		3(3-2-0)
20.	BPM-600	Master's Seminar		1
21.	BPM-601	Special Problem		1
22.	BPM-690	Master's Research		20
23.	BPM-788	Doctoral Seminar –I		1
24.	BPM-789	Doctoral Seminar –II		1
25.	BPM-790	Doctoral Resarch		45

(B). Statistics

			Pre- Requisite Course (if any)	
1.	* BPS-561	Statistical Methods	-	3(2-0-1)
2.	BPS-571	Probability Theory and Distributions	-	2(2-2-0)
3.	BPS-572	Design of Experiments I	-	4(2-0-2)
4.	BPS-573	Design of Experiments II	BPS 572	3(2-0-1)
5.	BPS-574	Sampling Techniques I	-	3(2-0-1)
6.	BPS-575	Sampling Techniques II	BPS 574	3(2-0-1)
7.	BPS-576	Estimation and Statistical Hypotheses Testing	BPS-571	4(3-1-1)
8.	BPS-577	Multivariate Analysis and Official Statistics	BPS 576	3(2-0-1)
9.	BPS-606	Computer Applications in Biometrics	BPS-561 or BPS-661	2(0-0-2)
10.	BPS-661	Experimental Statistics	-	4(3-0-1)
11.	BPS-662	Advanced Experimental Designs	-	3(2-0-1)

12.	BPS-663	Linear Models	BPS 571	2(2-1-0)
13.	BPS-669	Operations Research	-	3(3-1-0)
14.	BPS-671	Theory of Sampling	-	3(2-0-1)
15.	BPS-672	Mathematical Statistics	-	3(3-1-0)
16.	BPS-681	Data Analysis and Forecasting	-	3(3-1-0)
17.	BPS-600	Master's Seminar		1
18.	BPS-601	Special Problem		1
19.	BPS-690	Master's Research		20

* Only one of the Course from BPS 561 and BPS 661 will be included in the course programme.

(C). Computer Science

1.	BPM-502	Introduction to Computers and Programming		2(1-0-1)
2.	BPM-503	Discrete Mathematical Structures		3(3-2-0)
3.	BPM-504	Data Processing		3(2-0-1)
4.	BPM-538	Relational Data Base Management System		3(2-1-1)
5.	BPM-540	Design and Analysis of Algorithm		3(3-2-0)
6.	BPM-551	Foundation of Theoretical Computer Science		3(3-2-0)
7.	BPM-552	Programming Language Concepts		3(3-2-0)
8.	BPM-553	Expert systems		3(3-2-0)
9.	BPM-605	Use of Computer Software		2(0-0-2)
10.	BPM-611	Boundary Value Problems, Integral Equations and Numerical Analysis		3(3-2-0)
11.	BPM-615	Computational Fluid Dynamics		3(3-2-0)
12.	BPM-621	Numerical Techniques for Computers		3(3-2-0)
13.	BPM-622	Numerical Solution of Partial Differential Equations		3(3-2-0)
14.	BPM-623	Computer Networks		2(1-1-1)
15.	BPM-641	Object Oriented Programming		3(2-1-1)
16.	BPM-642	Structured Programming Languages		3(2-1-1)
17.	BPM-652	Elements of Computer Operating Systems		3(2-0-1)
18.	BPM-651	Computer Graphics		2(1-0-1)
19.	BPM-653	Principles of Compiler Design		4(4-2-0)
20.	BPM-655	Management Information System		3(2-0-1)
21.	BPM-682	Numerical Methods		3(3-1-0)
22.	BPM-683	Computer Application in Numerical Methods		3(0-0-3)
23.	BPM-600	Master's Seminar		1
24.	BPM-601	Special Problem		1

(D). Remedial Courses

1.	BPS-401	Probability Theory		2(2-1-0)
2.	BPS-402	Statistical Inference		3(2-0-1)
3.	BPS-403	Experimental Designs and Sampling Methods		3(2-0-1)
4.	BPS-404	Applied Statistics and Regression analysis		3(2-0-1)
5.	BPM-409	Basic Mathematics		4(4-2-0)

Minor Packages for other Departments/ Majors

(A). List of Post Graduate Courses for Minor in Mathematics (8-10 credits)

1.	BPM-501	Linear Algebra and Advanced Calculus	3(3-2-0)
2.	BPM-511	Mechanics and Variational Principles	3(3-2-0)
3.	BPM-531	Real Analysis	3(3-2-0)
4.	BPM-532	Differential Geometry and Tensors	3(3-2-0)
5.	BPM-533	Topology	3(3-2-0)
6.	BPM-534	Complex Analysis	3(3-2-0)
7.	BPM-535	Differential Equations	3(3-2-0)
8.	BPM-536	Abstract Algebra	3(3-2-0)
9.	BPM-602	Special functions and Integral Equations	2(2-1-0)
10.	BPM-604	Difference, Differential Equations and Topology	3(3-2-0)
11.	BPM-607	Transformations and Calculus of Variations	2(2-1-0)
12.	BPM-635	Functional Analysis	3(3-2-0)
13.	BPM-681	Mathematical Methods	3(3-1-0)
14.	BPM-711	Mathematical Modeling	3(3-2-0)
15.	BPM-713	Boundary Value Problems	3(3-2-0)
16.	BPM-731	Advanced Analysis	3(3-2-0)
17.	BPM-732	Integral Transforms and Z-transforms	3(3-2-0)
18.	BPM-734	Differentiable Manifolds	2(2-1-0)
19.	BPM-737	Special Functions	3(3-2-0)

(B). List of Post Graduate Courses for Minor in Statistics (8-10 credits)

			Pre- Requisite Course (if any)	
1.	* BPS-561	Statistical Methods	-	3(2-0-1)
2.	BPS-571	Probability Theory and Distributions	-	2(2-2-0)
3.	BPS-572	Design of Experiments I	-	4(2-0-2)
4.	BPS-573	Design of Experiments II	BPS 572	3(2-0-1)
5.	BPS-574	Sampling Techniques I	-	3(2-0-1)
6.	BPS-575	Sampling Techniques II	BPS 574	3(2-0-1)
7.	BPS-576	Estimation and Statistical Hypotheses Testing	BPS-571	4(3-1-1)
8.	BPS-577	Multivariate Analysis and Official Statistics	BPS 576	3(2-0-1)
9.	BPS-606	Computer Applications in Biometrics	BPS-561 or BPS-661	2(0-0-2)
10.	BPS-661	Experimental Statistics	-	4(3-0-1)
11.	BPS-662	Advanced Experimental Designs	-	3(2-0-1)
12.	BPS-663	Linear Models	BPS 571	2(2-1-0)
13.	BPS-669	Operations Research	-	3(3-1-0)
14.	BPS-671	Theory of Sampling	-	3(2-0-1)
15.	BPS-672	Mathematical Statistics	-	3(3-1-0)
16.	BPS-681	Data Analysis and Forecasting	-	3(3-1-0)

* Only one of the Course from BPS 561 and BPS 661 will be included in the course programme.

(C). List of Post Graduate Courses for Minor in Computer Science (8-10 credits)

1.	BPM-502	Introduction to Computers and Programming	2(1-0-1)
2.	BPM-503	Discrete Mathematical Structures	3(3-2-0)
3.	BPM-504	Data Processing	3(2-0-1)
4.	BPM-538	Relational Data Base Management System	3(2-1-1)
5.	BPM-540	Design and Analysis of Algorithm	3(3-2-0)
6.	BPM-551	Foundation of Theoretical Computer Science	3(3-2-0)
7.	BPM-552	Programming Language Concepts	3(3-2-0)
8.	BPM-553	Expert systems	3(3-2-0)
9.	BPM-605	Use of Computer Software	2(0-0-2)
10.	BPM-611	Boundary Value Problems, Integral Equations and Numerical Analysis	3(3-2-0)
11.	BPM-615	Computational Fluid Dynamics	3(3-2-0)
12.	BPM-621	Numerical Techniques for Computers	3(3-2-0)
13.	BPM-622	Numerical Solution of Partial Differential Equations	3(3-2-0)
14.	BPM-623	Computer Networks	2(1-1-1)
15.	BPM-641	Object Oriented Programming	3(2-1-1)
16.	BPM-642	Structured Programming Languages	3(2-1-1)
17.	BPM-652	Elements of Computer Operating Systems	3(2-0-1)
18.	BPM-651	Computer Graphics	2(1-0-1)
19.	BPM-653	Principles of Compiler Design	4(4-2-0)
20.	BPM-655	Management Information System	3(2-0-1)
21.	BPM-682	Numerical Methods	3(3-1-0)
22.	BPM-683	Computer Application in Numerical Methods	3(0-0-3)

6. Microbiology

M.Sc. (Microbiology)

Core Courses (14 credits)

BBM-500	General Microbiology	3(3-0-0)
BBM-506	Microbial Physiology and Metabolism	2(2-0-0)
BBM-507	Microbial Biotechnology	3(3-0-0)
BBM-510	Microbiological Techniques	2(0-0-2)
BBM-645	Microbial Genetics	3(2-0-1)
BBM-600	Master's Seminar	1
	Sub Total	14

Basic Supporting Courses (7 credits)

BBC-501	General Biochemistry	3(3-0-0)
BBC-505	Basic Techniques in Biochemistry	1(0-0-1)
BPC-614	Spectroscopic and Chromatographic Techniques	3(2-0-1)
	Sub Total	7

Optional/ Minor Courses (9 credits)

9

Thesis Research (20 credits)

BBM-690	Master's Thesis Research	20
	Total	50

Ph.D. (Microbiology)

Core Courses (13 credits)

BBM-640	Industrial Microbiology	2(2-0-0)
BBM-710	Research Techniques in Microbiology	2(0-0-2)
BBM-721	Current topics in Soil Microbiology	2(2-0-0)
BBM-725	Microbial Diversity and Taxonomy	3(3-0-0)
BBM-730	Advanced Microbial Physiology	2(2-0-0)
BBM-788	Doctoral Seminar-I	1
BBM-789	Doctoral Seminar-II	1
	Sub Total	13

Basic Supporting Courses (3 credits)

BBC-740	Advanced Biochemistry and Molecular Biology	3(3-0-0)
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Optional Courses (4 credits)

4

Minor Courses (10 credits)

10

Thesis Research (45 credits)

BBM-790	Ph.D. Thesis Research	45
	Total	75

List of Post Graduate Courses of the Department

BBM-500	General Microbiology	3(3-0-0)
BBM-506	Microbial Physiology and Metabolism	2(2-0-0)
BBM-507	Microbial Biotechnology	3(3-0-0)
BBM-510	Microbiological Techniques	2(0-0-2)
BBM-600	Master's Seminar	1
BBM-601	Special Problem	1
BBM-610	Application of Microbial Methods	2(0-0-2)
BBM-640	Industrial Microbiology	2(2-0-0)
BBM-645	Microbial Genetics	3(2-0-1)
BBM-651	Yeast	2(1-0-1)
BBM-690	Master's Thesis Research	20
BBM-710	Research Techniques in Microbiology	2(0-0-2)
BBM-721	Current Topics in Soil Microbiology	2(2-0-0)
BBM-725	Microbial Diversity & Taxonomy	3(3-0-0)
BBM-730	Advanced Microbial Physiology	2(2-0-0)
BBM-731	Advances in Microbial Technology	1(1-0-0)
BBM-740	Microbial Enzyme Technology	2(2-0-0)
BBM-788	Doctoral Seminar-I	1
BBM-789	Doctoral Seminar-II	1
BBM-790	Ph.D. Thesis Research	45

7. Molecular Biology and Genetics Engineering.

M.Sc. Ag./ M.V.Sc. (Molecular Biology and Biotechnology)

Core Courses (12 credits)

BMB-520	Fundamentals of Molecular Biology	3 (3-0-0)
BMB-560	Immunology and Molecular Diagnostics	2 (2-0-0)
BMB-618	Principles in Genetic Engineering	3 (3-0-0)
BMB-615	Techniques in Genetic Engineering	3 (0-0-3)
BMB-600	Master's Seminar	1
Sub Total		12

Basic Supporting Courses (9 credits)

BBM-500	General Microbiology	3(3-0-0)
BCC-501	General Biochemistry	3(3-0-0)
BMB-570	Introduction to Bioinformatics	3 (2-1-0)
Sub Total		9

Optional Courses (9 credits)

Thesis Research (20 credits)

BMB-690	Master's Thesis Research	20
Total		50

Ph.D. (Molecular Biology and Biotechnology)

Core Courses (12 credits)

BMB-710	Advanced Molecular Biology	2 (2-0-0)
BMB-720	Advances in Genetic Engineering	3 (3-0-0)
BMB-730	Advances in Functional Genomic and Proteomics	3 (3-0-0)
BMB-735	Immunological Applications in Biotechnology	2 (1-0-1)
BMB-788	Doctoral Seminar-I	1
BMB-789	Doctoral Seminar-II	1
Sub Total		12

Basic Supporting Courses (5 credits)

BPC-631	Mechanism of Organic Reactions	2(2-0-0)
BBC-740	Advanced Biochemistry & Molecular Biology	3 (3-0-0)
Sub Total		5

Optional Courses (3 credits)

Minor Courses (10 credits)

Thesis Research (45 credits)

BMB-790	Doctoral Thesis Research	45
Total		75

Compulsory Courses for Minor for Other Disciplines

BMB-520	Fundamentals of Molecular Biology	3 (3-0-0)
BMB-618	Principles in Genetic Engineering	3 (3-0-0)

List of Post graduate courses of the Department

BMB-510	Principles of Biotechnology	2(2-0-0)
BMB-520	Fundamentals of Molecular Biology	3(3-0-0)
BMB-530	Molecular Cell Biology	3(3-0-0)
BMB-535	Techniques in Cell Biology	2(0-0-2)
BMB-540	Molecular Genetics & Breeding	3(3-0-0)
BMB-545	Techniques in Molecular Biology	2(0-0-2)
BMB-550	Concept in Genomics & Proteomics	2(2-0-0)
BMB-560	Immunology & Molecular Diagnostic	2(2-0-0)
BMB-570	Introduction to Bioinformatics	3(2-0-1)
BMB-575	Biosafety, IPR & Bioethics	1(1-0-0)
BMB-600	Master's Seminar	1
BMB-601	Special Problem	2
BMB/ VGO-605	Embryo Transfer Technology	2(1-0-1)
BMB-615	Techniques in Genetic Engineering	3(0-0-3)
BMB-618	Principles in Genetic Engineering	3(3-0-0)
BMB-620	Microbial/ Industrial Biotechnology	2(2-0-0)
BMB-625	Plant Tissue Culture & Genetic Transformation	3(1-0-2)
BMB-630	Animal Biotechnology	2(2-0-0)
BMB-635	Animal Cell Culture: Principles & Applications	3(1-0-2)
BMB-640	Nano-Biotechnology	2(2-0-0)
BMB-650	Crop Biotechnology	2(2-0-0)
BMB-690	Master's Thesis Research	20
BMB-710	Advanced Molecular Biology	2(2-0-0)
BMB-715	Computer Applications in Molecular Modeling	2(0-0-2)
BMB-720	Advances in Genetic Engineering	3(2-0-1)
BMB-730	Advances in Functional Genomic & Proteomics	3(3-0-0)
BMB-735	Immunological Applications in Biotechnology	2(1-0-1)
BMB-740	Advances in Microbial Biotechnology	3(3-0-0)
BMB-750	Advances in Crop Biotechnology	3(3-0-0)
BMB-760	Advances in Animal Biotechnology	3(3-0-0)
BMB-785	Advances in Cell and Tissue Culture Technology	2(2-0-0)
BMB-788	Doctoral Seminar-I	1
BMB-789	Doctoral Seminar-II	1
BMB-790	Ph.D. Thesis Research	45

8. Physics

M.Sc. (Physics)

Core Courses (20 credits)

BPP-510	Mathematical Methods of Physics	2(2-1-0)
BPP-511	Classical Mechanics and Relativity	2(2-1-0)
BPP-512	Electromagnetism	2(2-1-0)
BPP-520	Quantum Mechanics	2(2-1-0)
BPP-525	Spectroscopy	2(2-1-0)
BPP-551	Statistical Mechanics	2(2-1-0)
BPP-552	Solid State Physics	2(2-1-0)
BPP-560	Nuclear Physics	2(2-1-0)
BPP-570	Experimental Physics	3(0-0-3)
BPP-600	Master's Seminar	1

Sub Total **20**

Basic Supporting Courses (2 credits)

BPM-502	Introduction to Computer Programming	2(1-0-1)
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Optional/ Minor Courses (8 credits)

8

Thesis Research (20 credits)

BPP -690	Master's Thesis Research	20
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Total **50**

Ph.D. (Physics)

Core Courses (12 credits)

BPP-711	Advanced Classical Mechanics	2(2-0-0)
BPP-720	Advanced Quantum Mechanics	2(2-0-0)
BPP-750	Advanced Statistical Mechanics	2(2-0-0)
BPP-751	Advanced Solid State Physics	2(2-0-0)
BPP-760	Advanced Nuclear Physics	2(2-0-0)
BPP-788	Doctoral Seminar I	1
BPP-789	Doctoral Seminar II	1

Sub Total **12**

Basic Supporting Courses (3 credits)

3(2-0-1)

Optional Courses (5 credits)

5

Minor Courses (10 credits)

10

Thesis Research (45 credits)

BPP-790	Ph.D. Thesis Research	45
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Total **75**

Minor package for other Departments/Major

Bpp-534	Agro meteorological Instrumentation	3(2-0-1)
BPP-550	Statistical Thermodynamics	2(2-1-0)
BPP-620	Introduction to Quantum Mechanics	2(2-1-0)
BPP-650	Advanced Kinetic Theory of Gases	2(2-1-0)
BPP-651	Thermodynamics of Irreversible Process	2(2-1-0)
BPP-652	Elements of Statistical Mechanics	2(2-1-0)
BPP-653	Solid State Physics and Material Science	2(2-1-0)

List of Courses of the Department

BPP-401	Physics for Agro meteorologists	3(2-0-1)
BPP-432	Introduction to Modern Physics	3(2-1-1)
BPP-510	Mathematical Methods of Physics	2(2-1-0)
BPP-511	Classical Mechanics and Relativity	2(2-1-0)
BPP-512	Electromagnetism	2(2-1-0)
BPP-520	Quantum Mechanics	2(2-1-0)
BPP-525	Spectroscopy	2(2-1-0)
BPP-530	Electronics	2(2-0-1)
BPP-534	Agro meteorological Instrumentation	3(2-0-1)
BPP-550	Statistical Thermodynamics	2(2-1-0)
BPP-551	Statistical Mechanics	2(2-1-0)
BPP-552	Solid State Physics	2(2-1-0)
BPP-560	Nuclear Physics	2(2-1-0)
BPP-570	Experimental Physics	4(0-0-4)
BPP-600	Master's Seminar	1
BPP-601	Special Problem	1-2
BPP-602	Agricultural Meteorology I	3(2-0-1)
BPP-603	Agricultural Meteorology II	3(2-0-1)
BPP-604	Solar Energy Physics	2(2-0-0)
BPP-620	Introduction to Quantum Mechanics	2(2-1-0)
BPP-625	Advanced Spectroscopy	2(2-0-0)
BPP-630	Introduction to Linear & Dig. Int. Circuits I	3(2-0-1)
BPP-631	Introduction to Linear & Dig. Int. Circuits II	3(2-0-1)
BPP-632	Instrumentation I	3(2-0-1)
BPP-633	Instrumentation II	3(2-0-1)
BPP-640	Biophysics I	3(2-0-1)
BPP-641	Biophysics II	3(2-0-1)
BPP-642	Basic Electron Microscopy	2(1-0-1)
BPP-643	Advanced Electron Microscopy	2(2-0-0)
BPP-650	Advanced Kinetic Theory of Gases	2(2-1-0)
BPP-651	Thermodynamics of Irreversible Process	2(2-1-0)
BPP-652	Elements of Statistical Mechanics	2(2-1-0)
BPP-653	Solid State Physics and Material Science	2(2-1-0)
BPP-661	Nuclear Techniques in Agri. & Biology	2(2-0-0)
BPP-690	Master's Research	20
BPP-711	Advanced Classical Mechanics	2(2-0-0)
BPP-720	Advanced Quantum Mechanics	2(2-0-0)
BPP-721	Quantum Field Theory and Many Body Techniques	2(2-0-0)
BPP-730	Solid state Electronics	2(2-0-0)
BPP-733	Advanced Instrumentation	2(2-0-0)
BPP-750	Advanced Statistical Mechanics	2(2-0-0)
BPP-751	Advanced Solid State Physics	2(2-0-0)
BPP-752	Non Linear Optics and Solid state Spectroscopy	2(2-0-0)
BPP-753	Low Temperature Physics	2(2-0-0)
BPP-760	Advanced Nuclear Physics	2(2-0-0)
BPP-788	Doctoral Seminar I	1
BPP-789	Doctoral Seminar II	1
BPP-790	Ph.D. Thesis Research	45

Note: Courses of 400 series are remedial courses of the department

9. Plant Physiology

M.Sc. / M.Sc. (Ag.) (Plant Physiology)

Core Courses (14 credits)

BPY-501	Principles of Plant Physiology	4(3-0-1)
Bpy-503	Physiological and Molecular Responses of Plants of Abiotic Stresses	3(2-0-1)
BPY-511	Mineral Nutrition	3(2-0-1)
BPY-504	Hormonal Regulation of Plant Growth and Development	3(2-0-1)
BPY-600	Master's Seminar	1
	Sub Total	14

Basic Supporting Courses (6 credits)

BPS-561	Statistical Methods	3(2-0-1)
BBC-501	General Biochemistry	3(3-0-0)
	Sub Total	6

Optional Courses (8 credits)

Thesis Research (20 credits)

BPY-690	Master's Thesis Research	20
	Total	50

Ph.D. Plant Physiology

Core Courses (13 credits)

BPY-510	Physiological and Molecular Aspects of Photosynthesis Carbon and Nitrogen Assimilation	3(2-0-1)
BPY-603	Molecular approaches for Improving Physiological traits	3(2-0-1)
BPY-604	Techniques in Plant Physiology	3(1-0-2)
BPY-609	Functional Genomics and Genes Associated with a Few Physiological Processes	2(2-0-0)
BPY-788	Doctoral Seminar-I	1
BPY-789	Doctoral Seminar-II	1
	Sub Total	13

Basic Supporting Courses (4 credits)

BPS-661	Experimental Statistics	4(3-0-1)
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Optional Courses (3 credits)

		3
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Minor Package (10 credits)

		10
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Thesis Research (45 credits)

BPY-790	Ph.D. Thesis Research	45
	Total	75

Compulsory Courses for Minor for Other Discipline

BPY-602	Signal Perceptions , Transduction and Regulation of Physiological Process	2(2-0-0)
BPY-604	Techniques in Plant Physiology	3(1-0-2)

List of Post Graduate Courses of the Department

BPY -501	Principles of Plant Physiology	4(3-0-1)
BPY -502	Plant Developmental Biology-Physiological and Molecular Basis	2(2-0-0)
BPY -503	Physiological and Molecular Responses of Plants to Abiotic Stresses	3(2-0-1)
BPY -504	Hormonal Regulation of Plant Growth and Development	3(2-0-1)
BPY-506	Physiology of Growth and Yield and Modelling	2(1-0-1)
BPY-508	Morphogenesis Tissue Culture and Transformation	3(2-0-1)
BPY-509	Physiology of Crop Plant- Specific Case Studies	2(2-0-0)
BPY-510	Physiological and molecular Aspect of Photosynthesis Carbon and Nitrogen Assimilation	3(2-0-1)
BPY-511	Mineral Nutrition	3(2-0-1)
BPY-600	Master's Seminar	1
BPY-601	Functional Genomics and Genes Associated with a Few Physiological Processes	2(2-0-0)
BPY-602	Signal Perceptions , Transduction and Regulation of Physiological Process	2(2-0-0)
BPY-603	Molecular Approaches for Improving Physiological traits	3(2-0-1)
BPY-604	Techniques in Plant Physiology	3(1-0-2)
BPY-605	Climate Change and Crop Growth	2
BPY-606	Post Harvest Physiology	2(2-0-0)
BPY-607	Weed Physiology and Herbicide Action	2(1-0-1)
BPY-608	Seed Physiology	3(2-0-1)
BPY-690	Master's Thesis Research	20
BPY-788	Doctoral Seminar-I	1
BPY-789	Doctoral Seminar-II	1
BPY-790	Ph.D. Thesis Research	45

Biophysics

M. Sc. (Biophysics)

Core Courses (16 credits)

BBN-541	Principles of Biophysics	3(3-0-0)
BBN-571	Molecular Biophysical Techniques	3(2-0-1)
BBN-572	Experimental Biophysics	3(0-0-3)
BBN-549	Membrane Biophysics	3(2-0-1)
BBN-555	Biosensor	3(2-0-1)
BBN-600	Master's Seminar	1
Sub Total		16

Basic Supporting Courses (6 credits)

BBC-501	General Biochemistry	3(3-0-0)
BMB-520	Fundamentals of Molecular Biology	3(3-0-0)
Sub Total		6

Optional Courses (8 credits)

Thesis Research (20 credits)

BBN-690	Master's Thesis Research	20
Total		50

Remedial/Non Gradual Courses

a. B.Sc. (Bio/Agric./Biotech.)

BPM-409	Basic Mathematics	4(4-2-0)
BPP-432	Introduction to modern physics	3(2-1-1)

b. B.Sc. (PCM) Stream

BBB-105	Elementary Biology	4(3-0-1)
BBM-300	Introductory Microbiology	2(1-0-1)

Compulsory Courses for Minor for Other Discipline

BBN-541	Principles of Biophysics	3(3-0-0)
BBN-549	Membrane Biophysics	3(2-0-1)
BBN-555	Biosensor	3(2-0-1)

List of Post Graduate Courses of the Department

BBN-300	Elements of Biophysics and Bioinstrumentation	2(2-0-0)
BBN-315	Elements of Nanoscience & Nanotechnology	2(2-0-0)
BBN-540	Molecular Biophysics	3(3-0-0)
BBN-541	Principles of Biophysics	3(3-0-0)
BBN-542	Molecular Interaction	2(2-0-0)
BBN-545	Quantum Chemistry	3(3-0-0)
BBN-549	Membrane Biophysics	3(2-0-1)
BBN-552	Molecular Designing	2(2-0-0)
BBN-553	Biophotonics	2(2-0-0)
BBN-554	Radiation Biophysics	2(2-0-0)
BBN-555	Biosensor	3(2-0-1)
BBN-571	Molecular Biophysical Techniques	3(2-0-1)
BBN-572	Experimental Biophysics	3(0-0-3)
BBN/ BMB-581	Nanotechnology for Agriculture	2(2-0-0)
BBN-582	Industrial Nanotechnology	2(2-0-0)
BBN-583	Nanofiltration	2(2-0-0)
BBN/ BMB-584	Nanobiotechnology	2(2-0-0)
BBN/ BMB-558	Molecular Modelling & Drug Designing	2(1-0-1)
BBN-600	Master's Seminar	1
BBN-601	Special Problem	1-2
BBN-690	Master's Thesis Research	20