

Master of Science - M.Sc. (Bioinformatics)

Scheme of Teaching || **New CBCS Syllabus from 2016**

I Semester

Sl No	Subject Code	Subject Title	Type	Credits	Total No of Hours	Lecture Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Self Study Hrs / week
Hard Core Theory & Lab									
1	PH 521.1	Bioinformatics and Biological Databases	HC	4	45	3	2	--	2
2	PH 522.1	Computational and Structural Biology	HC	4	45	3	2	--	2
3	PH 523.1	Metabolism and Immunology	HC	4	45	3	2	--	2
4	PH 524.1	Cell and Molecular Biology	HC	4	45	3	2	--	2
5	PH 525.1P	Bioinformatics & Computational Biology Lab	HCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
Soft Core Theory & Lab									
6	PS 526.1	Programming: Java and Databases for Bioinformatics	SC	4	45	3	2	--	2
7	PS 527.1P	Programming: Java, DBMS Lab	SCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
8	---	Research Project - I	---	--	30	2	2	--	4
Total				26		17	16	12	14

* HC – Hard Core SC – Soft Core HCL – Hard Core Lab SCL – Soft Core Lab OE – Open Elective

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Sl No	Subject Code	Subject Title	Type	Credits	Total No of Hours	Lecture Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Self Study Hrs / week
Hard Core Theory & Lab									
1	PH 521.2	Genomics & Proteomics	HC	4	45	3	2	--	2
2	PH 522.2	Molecular Mechanics and Simulation	HC	4	45	3	2	--	2
3	PH 523.2P	Molecular Mechanics and Genomics Lab	HCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
Soft Core Theory & Lab									
4	PS 524.2	Biostatistics	SC	3	45	3	2	--	2
5	PS 525.2	PERL-CGI & Bioperl Programming	SC	3	45	3	2	--	2
6	PS 526.2P	Programming : PERL-CGI & Biostatistics Lab	SCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
Open Elective – Offered to other Depts									
7	PO 527.2	Bioethics, Biosafety and IPR	OE	3 *	45	3	--	--	2
Add-On									
8	---	Research Project – II	---	--	30	--	4	--	4
		Total		20+3*		15	16	12	14

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III Semester

Sl No	Subject Code	Subject Title	Type	Credits	Total No of Hours	Lecture Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Self Study Hrs / week
Hard Core Theory & Lab									
1	PH 521.3	Synthetic Biology & Drug Design	HC	4	45	3	2	--	2
2	PH 522.3	Systems Biology & Metabolic Engineering	HC	4	45	3	2	--	2
3	PH 523.3P	Systems Biology and Drug Design Lab	HCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
Soft Core Theory & Lab									
4	PS 524.3	Big Data Analytics for Bioinformatics	SC	3	45	3	2	--	2
5	PS 525.3	Programming : Python for Bioinformatics	SC	3	45	3	2	--	2
6	PS 526.3P	Programming :Python and Big Data Lab	SCL	3	90	--	(1 x 2) 2	(3 x 2) 6	--
Open Elective – Offered to other Depts									
7	PO 527.3	Genetic Counseling	OE	3 *	45	3	--	--	2
Add - On									
8	---	Domain Knowledge Project	---	--	30	--	4	--	4
		Total		20+3*		15	16	12	14

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IV Semester

Sl No	Subject Code	Subject Title	Credits	Max. Marks for Dissertation / Valuation		External Evaluation		Total
				Dissertation I	Dissertation II	Dissertation III	Max. Marks for Viva-voce (Final)	
1	PH 521.4	Industry Internship/ Project Work/ Dissertation	16	SRS & SDD (100)	Mid Term Evaluation (100)	Record Reading (100)	200	500
Sl No	Subject Code	Subject Title	Credits	Internal Evaluation		External Evaluation		Total
2	PS 522.4	Domain Knowledge Project	04	Assignments / Paper Presentation (50)		Documentation / Viva Voce (100)		150
Total			20	--	---	---	---	650

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I Semester

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Hard Core Theory & Lab									
1	PH 521.1	Bioinformatics and Biological Databases	HC	4	3	--	30	70	100
2	PH 522.1	Computational and Structural Biology	HC	4	3	--	30	70	100
3	PH 523.1	Metabolism and Immunology	HC	4	3	--	30	70	100
4	PH 524.1	Cell and Molecular Biology	HC	4	3	--	30	70	100
5	PH 525.1P	Bioinformatics & Computational Biology Lab	HCL	3	--	3	25	50	75
Soft Core Theory & Lab									
6	PS 526.1	Programming: Java and Databases for Bioinformatics	SC	4	3	--	30	70	100
7	PS 527.1P	Programming: Java, DBMS Lab	SCL	3	--	3	25	50	75
8	---	Research Project - I	AON	--	--	--	--	-	--
		Total		26			200	450	650

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2	PH 522.2	Molecular Mechanics and Simulation	HC	4	3	--	30	70	100
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5	PS 525.2	PERL-CGI & Bioperl Programming	SC	3	3	--	30	70	100
6	PS 526.2P	Programming : PERL-CGI & Biostatistics Lab	SCL	3	--	3	25	50	75
Open Elective – Offered to other Depts									
7	PO 527.2	Bioethics, Biosafety and IPR	OE	3 *	3	--	30	70	100
Add - On									
8	---	Research Project – II	AON	--	--	--	--	--	--
		Total		20+3*			200	450	650

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4	PS 524.3	Big Data Analytics for Bioinformatics	SC	3	3	--	30	70	100
5	PS 525.3	Programming : Python for Bioinformatics	SC	3	3	--	30	70	100
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Add – On									
8	---	Domain Knowledge Project	AON	--	--	--	--	--	--
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Sl No	Subject Code	Subject Title	Credits	Internal Evaluation		External Evaluation		Total
2	PS 522.4	Domain Knowledge Project	04	Assignments / Paper Presentation (50)		Documentation / Viva Voce (100)		150
Total			20	--	---	---	---	650