

Bachelor of Science

in

Physics, Chemistry and Mathematics

Programme Code: PCM
Duration: 3 Years

Detailed Syllabus with Scheme of Examination

FROM SESSION: 2019-2020 ONWARDS



Faculty of Science

CHHATRAPATI SHIVAJI MAHARAJ UNIVERSITY
PANVEL, NAVI MUMBAI

SEMESTER I

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSC	PMCC101	Algebra	5	1	0	30	70	100	6
DSC	PMCC102	Mechanics	4	0	0	30	70	100	4
DSC	PMCC103	Inorganic Chemistry-I	4	0	0	30	70	100	4
AECC		English Communication	2	0	0	15	35	50	2
DSC	PMCC102	Mechanics Lab	0	0	4	0	0	50	2
DSC	PMCC10	Inorganic Chemistry Lab	0	0	4	0	0	50	2
		Total	16	1	8	105	245	450	20

SEMESTER II

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSC	PCMC201	Differential Calculus & Vector Calculus	5	1	0	30	70	100	6
DSC	PCMC202	Thermal Physics	4	0	0	30	70	100	4
DSC	PCMC203	Organic Chemistry-I	4	0	0	30	70	100	4
AECC		Environmental Science	2	0	0	15	35	50	2
DSC	PCMC292	Thermal Physics Lab	0	0	4	0	0	50	2
DSC	PCMC293	Organic Chemistry-I Lab	0	0	4	0	0	50	2
		Total	16	1	8	105	245	450	20

SEMESTER III

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSC	PCMC301	Differential Equation	5	0	0	30	70	100	6
DSC	PCMC302	Waves and Optics	5	0	0	30	70	100	4
DSC	PCMC303	Organic Chemistry-II	5	0	0	30	70	100	4
SEC01		Computer graphics	2	0	0	15	35	50	2
DSC	PCMC392	Waves and Optics Lab	0	0	4	0	0	50	2
DSC	PCMC393	Organic Chemistry-II Lab	0	0	4	0	0	50	2
		Total	16	1	8	105	245	450	20

SEMESTER IV

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSC	PCMC401	Real Analysis I	5	1	0	30	70	100	6
DSC	PCMC402	Electricity and Magnetism	4	0	0	30	70	100	4
DSC	PCMC403	Inorganic Chemistry-II	4	0	0	30	70	100	4
SEC02		Operating System: Linux	2	0	0	15	35	50	2
DSC	PCMC492	Electricity and Magnetism Lab	0	0	4	0	0	0	2
DSC	PCMC493	Inorganic Chemistry-II Lab	0	0	4	0	0	0	2
		Total	16	1	8	105	245	450	20

SEMESTER V

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSE	MTBE50*	DSE-Mathematics I	5	1	0	30	70	100	6
DSE	PHBE50*	DSE-Physics I	4	0	0	30	70	100	4
DSE	CHBE50*	DSE- Chemistry I	4	0	0	30	70	100	4
SEC 03		Skill Enhancement Course	2	0	0	15	35	50	2
DSE	PHBE50*	DSE-Physics I Lab	0	0	4	0	0	0	2
DSE	CHBE50*	DSE- Chemistry I Lab	0	0	4	0	0	0	2
		Total	16	1	8	105	245	450	20

SEMESTER VI

Course Type	Course Code	Course Name	L	T	P	IA	UE	Total Marks	Credits
DSE	MTBE60*	DSE-Mathematics II	5	1	0	30	70	100	6
DSE	PHBE60*	DSE-Physics II	4	0	0	30	70	100	4
DSE	CHBE60*	DSE- Chemistry II	4	0	0	30	70	100	4
SEC04		Skill Enhancement Course	2	0	0	15	35	50	2
DSE	PHBE69*	DSE-Physics II Lab	0	0	4	0	0	0	2
DSE	CHBE69*	DSE-Physics II Lab	0	0	4	0	0	0	2
		Total	16	1	8	105	245	450	20

List of Discipline Specific Elective (DSE) Papers:

Department-Specific Electives offered by Department of Physics for students in B.Sc. (PCM)

Semester	Course Code (T+P)	Course Name	(L-T-P)	Credits
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V	PHBE501+PHBC591	Quantum Mechanics and Applications	4-0-4	6
V	PHBE502+ PHBC592	Solid State Physics	4-0-4	6
VI	PHBE601+PHBC691	Electromagnetic Theory	4-0-4	6
VI	PHBE602+PHBC692	Statistical Mechanics	4-0-4	6

Department-Specific Electives offered by Department of Chemistry for students in B.Sc. (PCM)

Semester	Course Code (T+P)	Course Name	(L-T-P)	Credits
V	CHBE501+CHBE591	Organic Spectroscopy	4-0-4	6
V	CHBE502+ CHBE592	Industrial Chemistry	4-0-4	6
VI	CHBE603+CHBE693	Novel Inorganic Solids	4-0-4	6
VI	CHBE602+CHBE692	Polymer Chemistry	4-0-4	6

Department-Specific Electives offered by Department of Mathematics for students in B.Sc. (PCM)

Semester	Course Code (T+P)	Course Name	(L-T-P)	Credits
V	MTBE501	Multivariate Calculus	5-1-0	6
V	MTBE502	Group Theory II	5-1-0	6
VI	MTBE601	Metric Spaces and Complex Analysis	5-1-0	6
VI	MTBE602	Ring Theory and Linear Algebra II	5-1-0	6

List of Skill Enhancement Course (SEC-1 & SEC-2) offered by Department of Physics (Any 2 to be selected)

Semester	Course Code	Course Name	(L-T-P)	Credits
III	PHBS391	Physics Workshop Skills	0-0-2	2
III	PHBS392	Computational Physics Skills	0-0-2	2
III	PHBS393	Electrical circuits and Network Skills	0-0-2	2
IV	PHBS491	Renewable Energy and Energy harvesting	0-0-2	2
IV	PHBS492	Radiation Safety	0-0-2	2
IV	PHBS493	Weather Forecasting	0-0-2	2

List of Skill Enhancement Course (SEC-1 & SEC-2) offered by Department of Mathematics (Any 2 to be selected)

Semester	Course Code	Course Name	(L-T-P)	Credits
III	MTBS391	Computer Graphics	0-0-2	2
III	MTBS392	Logic and Sets	0-0-2	2
IV	MTBS491	Operating System: Linux	0-0-2	2

List of Skill Enhancement Course (SEC-1 & SEC-2) offered by Department of Chemistry (Any 2 to be selected)

Semester	Course Code	Course Name	(L-T-P)	Credits
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III	CHBS301	IT Skills for Chemists	2-0-0	2
III	CHBS302	Chemical Tech & Society	2-0-0	2
III	CHBS303	Chemo informatics	2-0-0	2
IV	CHBS401	Analytical Clinical Biochemistry	2-0-0	2
IV	CHBS402	Green Methods in Chemistry	2-0-0	2
IV	CHBS403	Pharmaceutical chemistry	2-0-0	2