

Department Name: Chemistry

BSc(General) Major Chemistry

Level	Sem	Disciplinary Major Mandatory	DSE Electives	Minor						OE	VC/SEC	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Total	Exit Credit	Final Total Credits	
				Botany	Electronics	Mathematics	Microbiology	Statistics	Physics								Zoology
4.5	I	2 Cr T Basics in Chemistry 2 Cr T :Applied Chemistry 2 Cr P :Introductory Laboratory course	--								2 Cr T Chemistry in Everyday life 2 Cr T Kitchen and Food Chemistry	2 Cr Pr : Making of soaps, detergents and perfumes 2 Cr Pr : Preparation of solutions(2C)	2 Cr T:English Oral and written communication 2 Cr T :EVS 2 Cr T : IKS		22		22
4.5	II	2 Cr T Basic methods of Chemical analysis 2 Cr T Concepts of Organic and Inorganic Chem 2 Cr P Analytical Laboratory Techniques-I	--	2Cr-T:Understanding Phytodiversity	2Cr-T:Basics of Electronic devices and Systems	2Cr-T:Basic Course in Algebra	2 Cr-T: Introduction to Microbiology	2Cr-T:Learning Basics of Data Science using MS Excel	2Cr-T: Calibration Techniques/ Instrumentation for agriculture	2 Cr-T: Food, Nutrition and Health	2 Cr Pr Making of soaps, detergents 2 Cr P Chemistry of Fragrances	2 Cr Pr : Chromatographic techniques 2 Cr Pr : Basic Analytical Techniques	2 Cr T: Spoken English		22		22
Cumulative		12		2						8	8	10	4	44	4	48	
Certificate on Exit + 4 credit Bridge Course																	

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5	III	2 Cr T Physico Analytical Chemistry 2 Cr T Chemical bonding and Functional groups 2 Cr Pr Analytical Laboratory Techniques-II 2 Cr Pr Practical Synthetic Chemistry-I	--	2Cr-T:Botany for Entrepreneurs 2Cr-P:Botany for Entrepreneurs	2Cr-T:Digital System Design 2Cr-P:Practicals based on Digital System Design	2Cr-T:Basic Course in Calculus 2Cr-P:Practical Course based on Minor Paper - 2	2 Cr-T: Growth and cultivation of bacteria 2 Cr-P: Practical on Growth and cultivation of bacteria	2Cr-T:Introduction to R software and learning of exploratory data Analysis 2Cr-P:Use of R software to explore the data	2Cr-T: Basic Telecommunication 2Cr-P:Fun with Mechanics	2 Cr-T: Applied Zoology 2Cr-P: Applied Zoology	2 Cr T : Introduction to Forensic Science or 2 Cr T : Soil and Agro chemistry	2 Cr Pr : Soil and Water Analysis	2 Cr T :AEC 3 Marathi / Hindi (2)	2 Cr Pr : Chem (FP)	22		22
5	IV	2 Cr T Electro Analytical Chemistry 2 Cr T Coordination Chemistry and Organic reactions 2 Cr Pr Practical Environmental Analysis 2 Cr Pr Practical Synthetic Chemistry-II	--	2Cr-T:Field Botany 2Cr-P:Field Botany	2Cr-T:Analog System Design 2Cr-P:Practicals based on Analog System Design	2Cr-T: Matrix Theory 2Cr-P:Practical Course based on Minor Paper - 4	2 Cr-T: Industrial Microbiology 2 Cr-P: Industrial Microbiology	2Cr-T:Fitting of mathematical models for predicative data Analysis 2Cr-P:Use of R software for fitting of model	2Cr-T:Fiber Optic Communication 2Cr-P:Basic Optics	2Cr-T:Toxicology 2Cr-P:Toxicology	2 Cr T :Chemistry in Ayurveda	2 Cr Pr : Agro Chemistry	AEC 4 English Creative Writing (2)	2 Cr Pr: Chem (CEP 1)	22		22
Cumulative		28		10							12	12	14	12	88	4	92
Diploma on Exit + 4 credits of NSQF and Internship																	

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				Botany	Electronics	Mathematics	Microbiology	Statistics	Physics							
5.5	V	2 Cr T :Advanced Physical and Inorganic Chemistry-I (2C) 2 Cr T :Mechanistic Organic Chemistry-I (2C) 2 Cr Pr: Physical Chemistry Practical-I (2C) 2 Cr Pr Inorganic Chemistry Practical-I (2C) 2 Cr Pr: Organic Chemistry Practical-I (2C)	Any Two: 2 Cr T : Industrial Chemistry 2 Cr T : Modern Analytical Techniques 2 Cr T Introduction to Medicinal Chemistry	—	2Cr-T:Digital and wireless communication systems 2Cr-P:Practical based on Communication	2Cr-T:Differential and Integral Calculus 2Cr-P: Practical Course based on Minor Paper - 6	2 Cr-T: Medical Microbiology and immunology 2 Cr-P: Practical based on Medical Microbiology and immunology	2Cr-T:Statistical Quality control based on Statistical Quality control	2Cr-T:Lasers and its Applications 2Cr-P: Optoelectronics/ Photonics	2Cr-T: Biodiversity, Conservation and sustainable development 2Cr-P: Biodiversity, Conservation and sustainable development		2 Cr Pr Use of Chemistry Software		22		22
5.5	VI	2 Cr T:Advanced Physical and Inorganic Chemistry-II 2 Cr T - Mechanistic Organic Chemistry-II (2C) 2 Cr Pr: Physical Chemistry Practical-II (2C) 2 Cr Pr:Inorganic Chemistry Practical-II (2C) 2 Cr Pr: Organic Chemistry Practical-II(2C)	Any Two 2 Cr T : Polymer Chemistry (2C) 2 Cr T : Organic Spectroscopy (2C) 2 Cr T Solid State Chemistry (2C)	—	2Cr-T:Microcontroller and Embedded Systems 2Cr-P:Interfacing and Programming the microcontroller	2Cr-T:Applied Mathematics 2Cr-P:Practical Course based on Minor Paper - 8	Nanobiotechnology (2C)(Th) Practicals based on nanobiotechnology(2C)(Pr)	2Cr-T:Introduction to Python for handling large data 2Cr-P:Introduction to Data Analytics	2Cr-T:Acoustics 2Cr-P:Radiation Physics	2Cr-T:Environmental Monitoring and Management 2Cr-P:Environmental Monitoring and Management			OJT (4)	22		22
Cumulative		48	8		18		18	18	18	18	12	14	14	18	132	136
Award of Degree																

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				Botany	Electronics	Mathematics	Microbiology	Statistics	Physics							
6	VII	4 Cr T Thermodynamics and Chemical Kinetics 4 Cr T Organic reaction mechanism and stereochem 2 Cr Pr Organic Chemistry Practical 2 Cr Pr : Physical Chemistry Practical 2 Cr Pr Inorganic Chemistry Practical	4 Cr T Molecular symmetry, and main group Chemistry	2Cr-T: Research Methodology 2Cr-P: Research Methodology										22		22
6	VIII	4 Cr T Molecular spectroscopy and Nuclear chemistry 4 Cr T Organic spectroscopy and photochemistry 2 Cr Pr Organic Chemistry Practical 2 Cr Pr : Physical Chemistry Practical 2 Cr Pr Inorganic Chemistry Practical	4 Cr T Coordination and Bioinorganic chemistry (4C)									OJT: 4Cr(Pr) On Job Training /Industrial Project/Internship	22		22	
Cumulative		76	16	22						12	14	14	22	176		184