

B. Sc. CHEMISTRY
(Three Years Regular Programme)
(For Student Admitted from 2022-23)

- PSO1:** Understand basic concepts of Organic, Physical, Inorganic, Environmental, Computational and Analytical chemistry.
- PSO2:** Develop skills in the safe-handling of chemicals, taking into account of their characteristic properties including any particular hazards.
- PSO3:** Ability to apply the basic principles of different analytical methods to identify the properties of the compounds.
- PSO4:** Establish and convey the relevance of chemistry to global issues towards sustainable future through effective written, virtual communications and interact productively with people from varied backgrounds.
- PSO5:** Students will be applying appropriate methods of qualitative and quantitative analysis to estimate inorganic salt mixtures and organic compounds in practical classes.
- PSO6:** Students will learn to synthesize the new compounds by making correct choice of the reagents and find the optimum reaction conditions.
- PSO7:** Develop practical skills and knowledge in chemistry which helps student in their employability.

PREAMBLE

The following changes were introduced in the curriculum for the candidates to be enrolled from June 2022.

- ❖ Introduced new skill enhancement course in IV semester on Computer Fundamentals and C Programming.
- ❖ Changed the laboratory course on Industrial and inorganic chemistry combined with physical chemistry practicals.
- ❖ Physical Chemistry practicals has been modified as Advanced Physical Chemistry Practical allotted for the V Semester.
- ❖ Revised the syllabus content of the Skill Enhancement Course - II - Fundamentals of applied Chemistry (II Semester)
- ❖ Included Composite materials in Unit -III instead of Composite materials.
- ❖ Skill Enhancement Course-V- Selected topics in Applied Chemistry (V semester) – In Unit-V detail content of insecticides, fungicides and herbicides were replaced with vermiculture.
- ❖ In Unit-IV the content on Fertilizer Industry was replaced with Insecticides, Fungicides and Herbicides.
- ❖ Included the Journals list in the reference part for all the course content.
- ❖ Extra credit course-V-Chemistry of Consumer Products (III Semester) - reduced the course content in Unit-I on glass by removing the following topics, special glasses - optical glass, Borosilicate Glass, Soda Lime Glass, coloured Glass, Optical Glass, Opal

Glass, Fiber Glass, Bullet Resistant Glass, Glass Wool, Photosensitive Glass, Photochromic Glasses and Insulating Glasses and reduced the syllabus content.

- ❖ Extra credit course-V - Chemistry of Consumer Products (III Semester)-Unit - II - removed the following content on ceramics - Firing, Glazing, Frits and Decoration, Application of color to pottery, porcelain and china - raw materials and manufacture of earthen wares and stone wares. Replaced the unit title Ceramic instead of Ceramic Industry.
- ❖ Extra credit course-V-Chemistry of Consumer Products (III Semester)-In Unit - III - Unit title Alkali and Chlorine was replaced with Chlor- Alkali.
- ❖ Extra credit course-V-Chemistry of consumer products (III Semester)-In Unit -IV- title was changed from “Petroleum and Petroleum Products” to “Petroleum Products”.

In

addition to the title, Unit content on “Petroleum-preparation of petroleum for processing, distillation of crude petroleum, various fraction of composition and uses, Treatment of the residual liquid, Processing of liquid fuels such as petroleum and petroleum products” replaced with “origin, formation and evaluation of crude oil, refining of petroleum - atmosphere and vacuum distillation methods. Treatment method for the removal of sulphur compounds -solvent treatment process. Petroleum chemical product - DMT, MMA and formaldehyde.”

- ❖ Extra credit course-V - Chemistry of consumer products (III Semester) - In Unit - V - The title “Cottage Industry” was replaced with “Cottage Industrial Products”.

Programme Structure Program code: UCH

Sem.	Par t	Subject Code	Course	Subject Title	Hrs / wk.	Cred it	CIA	ESE	Total
I	I	IBLT11/ IBLA11/ IBLH11	Language - I	Tamil-I /Arabic-I / Hindi-I	5	3	40	60	100
	II	IBLII12/ IBLIII12	Language - II	English I a or b	5	3	40	60	100
	III	IBCHC11	Core -I	General Chemistry	5	4	40	60	100
		IBCHC12	Core -II	Inorganic Chemistry – I	6	5	40	60	100
		IBCHA1 3/ IBCHA1 4	AECC - I	Mathematics-I/ Biochemistry-I	5	4	40	60	100
	IV	IBCHS15 P	SEC - I	Preparation of Consumer Products practicals	2	2	-	50	50
				Library/Browsing	1	-	-	-	-
				Games/Remedial	1				
				Total	30	21	200	350	550

II	I	IBLT21/ IBLA21/ IBLH21	Language -I	Tamil-II /Arabic-II /Hindi-II	5	3	40	60	100
	II	IBLEI22/ IBLEII22	Language- II	English II a or b	5	3	40	60	100
	III	IBCHC21 P	Core -III	Inorganic Qualitative Analysis and Volumetric Analysis practicals	6	5	40	60	100
		IBCHC22	Core -IV	Physical Chemistry-I	4	4	40	60	100
		IBCHA2 3/ IBCHA2 4	AECC-II	Mathematics-II/ Biochemistry-II	5	4	40	60	100
	IV	IBCHS25	SEC-II	Fundamentals of Applied Chemistry	2	2	-	50	50
		IBES2	General Interest Course - I	Environmental Science	2	2	-	50	50
		IBCHX2/ IBCHX2 O	Extra Credit-I	Food Chemistry/online course*	-	2	-	100	100
				Games/Remedial	1	-	-	-	-
				Total	30	23 + 2	200	400 + 100	600 + 100
III	I	IBLT31/ IBLA31/ IBLH31	Language - I	Tamil III /Arabic - III / Hindi-III	5	3	40	60	100
	II	IBLEI32/ IBLEII32	Language - II	English III a or b	5	3	40	60	100
	III	IBCHC31	Core-V	Organic Chemistry – I	4	4	40	60	100
		IBCHC32 P	Core -VI	Organic Analysis & Organic Estimation practicals	4	4	40	60	100
		IBCHA3 3	AECC - I	Pharmaceutical Chemistry-I	4	4	40	60	100
	IV	IBCHS34	SEC-III	Introduction to Marine Chemistry - # internship	2	2	-	50	50
			OEC-I		2	2	-	50	50
		IBHR3	General Interest Course -II	Human Rights	2	2	-	50	50
		IBXTN3	Extension Activities	NSS/CSS	2	2	100	-	100

		IBCHX3/ IBCHX3 O	Extra Credit-II	Chemistry of Consumer Products/online course*	-	2	-	100	100
				Total	30	26 + 2	300	450 + 100	750 + 100
	I	IBLT41/ IBLA41/ IBLH41	Language - I	Tamil IV /Arabic IV /Hindi-IV	5	3	40	60	100
	II	IBLEI42/ IBLEII42	Language - II	English IV a or b	5	3	40	60	100
IV	III	IBCHC41	Core -VII	Inorganic Chemistry – II	5	4	40	60	100
		IBCHC42	Core-VIII	Organic Chemistry – II	4	4	40	60	100
		IBCHA4 4	AECC-II	Pharmaceutical Chemistry-II	5	4	40	60	100
	IV	IBCHS45	SEC - IV	Computer Fundamentals and C Programming	2	2	-	50	50
		IBLVE4	General Interest Course-III	Life Skills and Value Education	2	2	-	50	50
			OEC-II		2	2	-	50	50
		IBCHX4/ IBCHX4 O	Extra credit-III	Dairy Chemistry/online course*	-	2	-	100	100
				Total	30	24 + 2	200	450 + 100	650 + 100
V	III	IBCHC51	Core-IX	Physical Chemistry – II ● Integrated with online course	6	5	40	60	100
		IBCHC52	Core-X	Organic Chemistry – III	6	5	40	60	100
		IBCHC53 P	Core-XI	Advanced Physical Chemistry practicals	6	5	40	60	100
		IBCHE5 A/ IBCHE5 B	DSE-I	a. Industrial Chemistry/ b. Biological Chemistry	4	4	40	60	100
		IBCHE5 C/ IBCHE5 D	DSE-II	a. Textile Chemistry/ b. Analytical Methods - # internship	4	4	40	60	100
	IV	IBCHS54	SEC - V	Selected topics in Applied Chemistry	2	2	-	50	50

		IBWE5	General Interest Course -IV	Women Entrepreneurship	2	2	-	50	50
		IBCHX5/ IBCHX5 O	Extra Credit-IV	Employability Skills /online Course*	-	2	100	-	100
				Total	30	27 + 2	200 + 100	400	600 + 100
VI	III	IBCHC61 PW	Core-XII	Project	6	5	40	60	100
		IBCHC62	Core-XIII	Inorganic Chemistry – III ● Integrated with online course	5	4	40	60	100
		IBCHC63	Core -XIV	Physical Chemistry – III	6	4	40	60	100
		IBCHC64 P	Core-XV	Gravimetric Analysis and Organic preparation practicals	6	5	40	60	100
		IBCHE6 A/ IBCHE6 B	DSE-III	a. Introduction to Green Chemistry and Nano Chemistry/ b. Polymer Chemistry	4	4	40	60	100
	IV	IBCHS65 P	SEC-VI	Industrial Chemistry practicals	2	2	-	50	50
		IBCHX6/ IBCHX6 O	Extra credit-V	Industrial Training Report/online course*	-	2		100	100
				Library/ Browsing	1	-	-	-	-
				Total	30	24 + 2	200	350 + 100	550 + 100
				Grand Total	180	145 + 10	1300 + 100	2400 + 400	3700 + 500

AECC - Ability Enhancement Compulsory Course; SEC - Skill Enhancement Course; DSE - Discipline Specific Elective; OEC - Open Elective Course *For online certification credit alone will be assigned on submission of certificate obtained through appearing for online examination from Spoken Tutorial, SWAYAM, EDX, NPTEL, or Coursera.