

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
COIMBATORE – 641 029

Course Name: **B. Sc., Chemistry**

Curriculum and Scheme of Examination under CBCS

(Applicable to the students admitted during the Academic Year 2022-2023)

Semester	Part	Subject Code	Title of the Paper	Instruction hours/cycle	Exam. Marks			Duration of Exam (hours)	Credits
					CIA	ESE	TO TAL		
I	I	22TML101	Language I@	6	50	50	100	3	3
	II	22ENG101	English -I	6	50	50	100	3	3
	III	22UCH101	Core Paper 1 – Inorganic, organic and Physical chemistry – I	6	50	50	100	3	5
			Core practical – I Inorganic qualitative analysis & Preparation	3	-	-	-	-	-
	III	22UMA1A1/ 22UZO1A1	Allied A Paper I – Mathematics/ Zoology – I	7/5	50/ 30	50/ 45	100/ 75	3	5/4
			Allied Zoology practical	2	-	-	-	-	-
	IV	22EVS101	Environmental Studies **	2	-	50	50	3	2
	Total			30	-	-		-	18/ 17
II	I	22TML202	Language II@	6	50	50	100	3	3
	II	22ENG202	English –II	6	50	50	100	3	3
	III	22UCH202	Core Paper 2 – Inorganic, Organic and Physical chemistry – II	6	50	50	100	3	5
		22UCH2CL	Core practical – I Inorganic qualitative analysis & Preparation	3	50	50	100	3	2
	III	22UM2A2/ 22UZO2A2	Allied A Paper II – Mathematics/ Zoology – II	7/5	50/ 30	50/ 45	100/ 75	3	5/4
	III	22UZO2AL	Allied Zoology practical	2	25	25	50	3	2
	IV	22VED201	Value Education- Moral and Ethics**	2	-	50	50	3	2
	Total			30	-	-		-	20/

									21
III	I	22TML303	Language III@	6	50	50	100	3	3
	II	22ENG303	English –III	6	50	50	100	3	3
	III	22UCH303	Core Paper 3 - Inorganic, Organic and Physical chemistry – III	4	50	50	100	3	4
			Core practical – II Inorganic Volumetric and Organic qualitative analysis	3	-	-	-	-	-
	III	22UPH3A1	Allied B Paper 1 – Physics I	4	30	45	75	3	4
			Allied Physics practical - I	3	-	-	-	-	-
	IV	22UGC3S1	Skill Based Subject I- Cyber Security*	2	100	-	100	2	3
	IV	22TBT301/22 TAT301/22U HR3N1	Basic Tamil* / Advanced Tamil**/ Non-major elective- I**	2	-	75	75	3	2
	Total			30	-	-		-	19
IV	I	22TML404	Language IV@	6	50	50	100	3	3
	II	22ENG404	English –IV	6	50	50	100	3	3
	III	22UCH404	Core Paper 4 - Inorganic, Organic and Physical chemistry – IV	4	50	50	100	3	4
	III	22UCH4CM	Core practical – II Inorganic Volumetric and Organic qualitative analysis	3	50	50	100	6	3
	III	22UPH4A2	Allied B Paper II – Physics I	4	30	45	75	3	4
	III	22UPH4AL	Allied Physics practical - I	3	25	25	50	3	2
	IV	22UCH4S2	Skill Based Subject II- Water pollution and management	2	50	50	100	3	3
	IV	22TBT402/22 TAT402/22U WR4N2	Basic Tamil* / Advanced Tamil**/ Non-major elective- II**	2	-	75	75	3	2
	Total			30	-	-		-	24
V	III	22UCH505	Core Paper 5 – Spectroscopy and chromatographic techniques	3	50	50	100	3	3
	III	22UCH506	Core Paper 6 – Inorganic Chemistry	3	50	50	100	3	4
	III	22UCH507	Core Paper 7 – Organic	4	50	50	100	3	4

			reaction mechanism						
	III	22UCH508	Core Paper 8 – Physical Chemistry - I	4	50	50	100	3	4
	III	22UCH5E1	Major Elective 1	4	50	50	100	3	5
	III		Core practical – III Gravimetric Analysis	3	-	-	-	-	-
	III		Core practical – IV Physical Chemistry experiments	4	-	-	-	-	-
	III		Core practical – V Application Oriented Practical	3	-	-	-	-	-
	IV		EDC *	2	100	-	100	3	3
	-	22UCH5IT	Internship Training *****	Grade					
	Total			30	-	-		-	23
VI	III	22UCH609	Core Paper 9 – Solid state and Coordination Chemistry	5	50	50	100	3	3
	III	22UCH610	Core Paper 10 Chemistry of natural products	5	50	50	100	3	3
	III	22UCH611	Core Paper 11 Physical Chemistry - II	4	50	50	100	3	3
	III	22UCH6E2	Major Elective 2	4	50	50	100	3	5
	III	22UCH6CN	Core practical – III Gravimetric Analysis	3	50	50	100	3	3
	III	22UCH6CO	Core practical – IV Physical Chemistry experiments	4	50	50	100	3	4
		22UCH6CP	Core practical – V Application Oriented Practical	3	50	50	100	3	4
	III	22UCH6Z1	Project viva-voce**	-	50	50	100	-	5
	IV	22UCH6S3	Skill Based Subject III - Food Chemistry	2	50	50	100	3	3
			SWAYAM - MOOC						2
	Total			30	-	-		-	35
	V	22NCC\$ / NSS/YRC /PYE/ECC/R RC/ WEC101#	Co curricular Activities*	-	50	-	50	-	1
Grand Total				-	-	-	3800	-	140

Note:

CBCS – Choice Based Credit system
CIA – Continuous Internal Assessment
ESE – End of Semester Examinations

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\$ For those students who opt NCC under Co curricular activities will be studying the prescribed syllabi of the UGC which will include Theory, Practical & Camp components. Such students who qualify the prescribed requirements will earn an additional 24 credits.

@ Hindi/Malayalam/ French/ Sanskrit – 22HIN/MLM/FRN/SAN101 - 202

* - No End-of-Semester Examinations. Only Continuous Internal Assessment (CIA)

** - No Continuous Internal Assessment (CIA). Only End-of-Semester Examinations (ESE)

*** Project Report – 35 marks; Viva voce – 15 marks; Internal-50 marks

**** The students shall undergo Internship training / field work for a minimum period of 2 weeks at the end of the fourth semester during summer vacation and submit the report in the fifth semester. The report will be evaluated for 100 marks along with the internal viva voce by the respective Faculty. According to their marks, the grades will be awarded as given below.

Marks %	Grade
85 – 100	O
70 – 84	D
60 – 69	A
50 – 59	B
40 – 49	C
< 40	U (Reappear)

Major Elective Papers

(2 papers are to be chosen from the following 6 papers)

Polymer technology

1. Nano and green Chemistry
2. Pharmaceutical Chemistry
3. Agricultural Chemistry
4. Dairy Chemistry
5. Leather Chemistry

Non-Major Elective Papers

1. Human Rights
2. Women's Rights
3. Consumer Affairs

Sub. Code & Title of the Extra Departmental Course (EDC):

22UCH5X1 - Chemistry in day today life

List of Co curricular Activities:

1. National Cadet Corps (NCC)
2. National Service Scheme (NSS)
3. Youth Red Cross (YRC)
4. Physical Education (PYE)
5. Eco Club (ECC)
6. Red Ribbon Club (RRC)
7. Women Empowerment Cell (WEC)

Note: In core/ allied subjects, no. of papers both theory and practical are included wherever applicable. However, the total credits and marks for core/allied subjects remain the same as stated below.

Tally Table

S.No.	Part	Subject	Marks	Credits
1	I	Language – Tamil/Hindi/Malayalam/ French/ Sanskrit	400	12
2	II	English	400	12
3	III	Core – Theory/Practical	1600	58
	-	SWAYAM - MOOC	-	2
	III	Allied	400	20
		Electives/Project	300	15
4	IV	Basic Tamil / Advanced Tamil (OR) Non-major electives	150	4
		Skill Based subject	300	9
		EDC	100	3
		Environmental Studies	50	2
		Value Education	50	2
5	V	Extension Activities	50	1
6		Total	3800	140

- 50 % CIA is applicable to all subjects except EDC, JOC, COP and SWAYAM courses which are considered as extra credit courses.
- The students should complete a **SWAYAM-MOOC** before the completion of the 5th semester and the course completed certificate should be submitted through the HOD to the Controller of Examinations. Two credits will be given to the candidates who have successfully completed. In case the students have completed more than one online course, the appropriate 2 extra credits shall be awarded to such candidates upon the submission of certificate through the HOD to the Controller of Examinations.
- A **Field Trip** preferably relevant to the course should be undertaken every year.

Components of Continuous Internal Assessment (50 Marks)

Components		Marks	Total
Theory			
CIA I	75	(75+75) converted to 30	50
CIA II	75		
Problem based Assignment**		10	
Attendance		5	
Others*		5	
Practical			
CIA Practical		(50) converted to 30	50
Observation Notebook		15	
Attendance		5	
Project			
Review		45	50
Regularity		5	

Components of Continuous Internal Assessment (30 Marks & 25 Marks)

Components		Marks	Total
Theory			
CIA I	45	(45+45) converted to 15	30
CIA II	45		
Problem based Assignment**		5	
Attendance		5	
Others*		5	
Practical			
CIA Practical		(25) converted to 10	25
Observation Notebook		10	
Attendance		5	

* Class Participation, Case Studies Presentation, Field Work, Field Survey, Group Discussion, Term Paper, Workshop/Conference Participation. Presentation of Papers in Conferences, Quiz, Report/Content writing. Etc.

** Two Assignments to be given. (Each 5 marks).

BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN

(K1-Remembering; K2-Understanding; K3-Appling; K4-Analyzing; K5-Evaluating)
Theory Examination – Part I, II & III

i) CIA I & II and ESE: 75 Marks

Knowledge Level	Section	Marks	Description	Total
K1 – K2 Q1 to 20	A (Answer all)	20 x 1 = 20	MCQ-10/ Fill ups-5/ One word-5	75**
K2 – K5 Q21 to 28	B (5 out of 8)	5 x 5 = 25	Short Answers	
K2 – K5 Q29 to 33	C (3 out of 5)	3 x 10 = 30	Descriptive / Detailed	

****For ESE 75 marks converted to 50 marks.**

ii) CIA I & II and ESE: 45 Marks

Knowledge Level	Section	Marks	Description	Total
K1 – K2 Q1 to 10	A (Answer all)	10 x 0.5 = 5	MCQ	45
K2 – K5 Q11 to 15	B (either or type)	5 x 3 = 15	Short Answers	
K2 – K5 Q16 to 20	C (either or type)	5 x 5 = 25	Descriptive / Detailed	

ESE Practical Examination:

Option 1:

Knowledge Level	Section	Marks	Total
K3	Experiments Record Work	45	50
K4		05	
K5			

Knowledge Level	Section	Marks	Total
K3	Experiments Record Work	20	25
K4		05	
K5			

ESE Project Viva Voce:

Option 1:

Knowledge Level	Section	Marks	Total
K3	Project Report	35	50
K4		15	
K5	Viva voce		