

Dr. N.G.P. ARTS AND SCIENCE COLLEGE (Autonomous)

**REGULATIONS 2024-25 for Under Graduate Programme
(Outcome Based Education model with Choice Based Credit System)**

B.Sc. Degree

(For the students admitted during the academic year 2024-25 and onwards)

Programme: B.Sc. CHEMISTRY

Eligibility

A candidate who has A pass in Higher Secondary Examination with Mathematics, Physics, Chemistry, Biology/Computer Science as per the norms set by the Government of Tamil Nadu or an Examination accepted as equivalent there to by the Academic Council, subject to such conditions as may be prescribed there to are permitted to appear and qualify for the **Bachelor of Science (CHEMISTRY)** Degree Examination of this College after a course study of three academic years.

Programme Educational Objectives

The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their graduation:

1. To understand the interdisciplinary nature of Chemistry and to integrate knowledge of Mathematics, Physics and other disciplines to a wide variety of chemical problems.
2. To enable the students to learn laboratory skills to design, safely conduct and interpret chemical research.
3. To develop the ability to effectively communicate scientific information and research results in written and oral formats.
4. To provide a broad foundation in Chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective.
5. To make students learn professionalism, including the ability to work in teams and apply basic ethical principles.



PROGRAMME OUTCOMES:

On the successful completion of the program, the following are the expected outcomes.

PO Number	PO Statement
PO1	Apply knowledge in scientific concepts, fundamental principles and varied theories to extend their relevance in day-to-day life.
PO2	Build the foundation in the current trends of chemistry with experimental skills
PO3	Make use research based knowledge in multidisciplinary approaches.
PO4	Extend the role and need of the chemist in societal, environmental contexts and demonstrate the knowledge for sustainable development.
PO5	Plan and organize as a member or leader in the diverse team and ability to engage in independent life - long learning in the broadest context of technological change.



Credit distribution - Common for R6

For students admitted in AY 24-25 and onwards.
Credit distribution for all UG programmes

Part	Subjects	No. of Papers	Credit	Semester No.
I (12 Credits)	Tamil / Hindi / French/Malayalam	4	4 x 3 = 12	I & IV
II (12 Credits)	English	4	4 x 3 = 12	I & IV
III (108 Credits)	Core (Credits 2,3,4,5)	16-19	70	I to VI
	Inter Departmental Course (IDC)	4	16	I to IV
	Discipline Specific Elective (DSE)	3	3 x 4 =12	V & VI
	Skill Enhancement Course (SEC)	4	8	III, IV, V& VI
	Industrial Training	1	2	V
IV (8 Credits)	Environmental Studies (AECC)	1	2	I
	Basic Tamil/ Advance Tamil /Human Rights & Women's Rights (AECC)	1	2	II
	Innovation & IPR/Innovation, IPR & Entrepreneurship (AECC)	1	2	VI
	Generic Elective (GE) (AEEC)	1	2	V
V (2 Credits)	NSS/NCC/YRC/RRC/Yoga/Sports/Clubs	-	2	I-II
TOTAL CREDITS			142	



CURRICULUM

PROGRAMME NAME – B. Sc Chemistry
A.Y: 2024-25

Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
First Semester												
Part - I												
24TLU1TA	Language - I	Tamil - I	4	1	-	5	60	3	25	75	100	3
24TLU1HA		Hindi - I										
24TLU1MA		Malayalam - I										
24TLU1FA		French - I										
Part - II												
24ELU1EA	Language - II	English - I	4	-	1	5	60	3	25	75	100	3
Part - III												
24CEU1CA	Core- I	General Chemistry - I	4	1	-	5	60	3	25	75	100	4
24CEU1CP	Core Practical- I	Volumetric Analysis and Preparation	-	-	6	6	72	3	40	60	100	3
24PYU1IM	IDC- I	Physics - I	3	-	4	7	84	3	40	60	100	5
Part - IV												
24MBU1AA	AECC- I	Environmental studies	2	-	-	2	24		50	-	50	2
Part - V												
24CEU1XA	Extension Activity	NSS/NCC/ YRC/RRC/ Yoga/Sports/Clubs	-	-	-				50	-	50	1
Total			17	2	11	30	360				600	21



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Second Semester												
Part - I												
24TLU2TA	Language - I	Tamil - II	4	1	-	5	60	3	25	75	100	3
24TLU2HA		Hindi - II										
24TLU2MA		Malayalam - II										
24TLU2FA		French - II										
Part - II												
24ELU2EA	Language- II	English - II	4	-	1	5	60	3	25	75	100	3
Part - III												
24CEU2CA	Core - II	General Chemistry - II	3	-	-	3	36	3	25	75	100	3
24CEU2CB	Core- III	General Chemistry - III	4	-	-	4	48	3	25	75	100	4
24CEU2CP	Core Practical- II	Organic Chemistry	-	-	4	4	48	3	40	60	100	2
24PYU2IM	IDC- II	Physics - II	3	-	4	7	84	3	40	60	100	5
Part - IV												
24TLU2AA	AECC- II	Basic Tamil	2	-	-	2	24		50	-	50	2
24TLU2AB		Advanced Tamil										
24CRU2AA		Human Rights and Women's Rights										
Part - V												
24CEU2XA	Extension Activity	NSS/NCC/ YRC/RRC/ Yoga/Sports/ Clubs	-	-	-				50	-	50	1
Total			20	1	9	30	360				700	23



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Third Semester												
Part - I												
24TLU3TA	Language - I	Tamil - III	3	1	-	4	48	3	25	75	100	3
24TLU3HA		Hindi - III										
24TLU3MA		Malayalam - III										
24TLU3FA		French - III										
Part - II												
24ELU3EA	Language- II	English - III	3	1	-	4	48	3	25	75	100	3
Part - III												
24CEU3CA	Core- IV	Applied Chemistry	4	-	-	4	48	3	25	75	100	4
24CEU3CB	Core- V	Analytical Chemistry	4	-	-	4	48	3	25	75	100	4
24CEU3CP	Core Practical-III	Inorganic Chemistry	-	-	6	6	72	3	40	60	100	3
24CEU3SP	SEC- I	Computer Applications for Chemistry	-	-	4	4	48	3	40	60	100	2
24MTU3IM	IDC- III	Mathematics with MATLAB	2	-	2	4	48	3	40	60	100	3
Total			16	2	12	30	360				700	22



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Fourth Semester												
Part - I												
24TLU4TA	Language - I	Tamil - IV	3	1	-	4	48	3	25	75	100	3
24TLU4HA		Hindi - IV										
24TLU4MA		Malayalam - IV										
24TLU4FA		French - IV										
Part - II												
24ELU4EA	Language- II	English - IV	3	1	-	4	48	3	25	75	100	3
Part - III												
24CEU4CA	Core - VI	Inorganic Chemistry - I	4	1	-	5	60	3	25	75	100	5
24CEU4CB	Core- VII	Spectroscopy and Chromatography	4	-	-	4	48	3	25	75	100	4
24CEU4CP	Core Practical- IV	Gravimetric Analysis	-	-	6	6	72	3	40	60	100	3
24CEU4SA	SEC- II	Green Chemistry	3	-	-	3	36	3	25	75	100	2
24MTU4IM	IDC- IV	Statistical Analysis and Tools	2	-	2	4	48	3	40	60	100	3
Total			19	3	8	30	360				700	23



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Fifth Semester												
Part - III												
24CEU5CA	Core- VIII	Inorganic Chemistry - II	4	-	-	4	48	3	25	75	100	4
24CEU5CB	Core- IX	Organic Chemistry - I	4	-	-	4	48	3	25	75	100	4
24CEU5CC	Core- X	Physical Chemistry - I	4	-	-	4	48	3	25	75	100	4
24CEU5CP	Core Practical- V	Physical Chemistry	-	-	6	6	72	3	40	60	100	3
24CEU5CQ	Core Practical- VI	Applied Chemistry	-	-	4	4	48	3	40	60	100	2
24CEU5SA	SEC- III	Nanomaterials and Nanotechnology	2	-	-	2	24	3	25	75	100	2
24CEU5DA	DSE- I	Industrial Chemistry	4	-	-	4	48	3	25	75	100	4
24CEU5DB		Agricultural Chemistry										
24CEU5DC		Forensic Chemistry										
24CEU5TA	IT	Industrial Training							40	60	100	2
Part - IV												
	GE		2	-	-	2	24	3	50	-	50	2
Total			20	-	10	30	360				850	27



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Sixth Semester												
Part - III												
24CEU6CA	Core- XI	Organic Chemistry - II	4	1	-	5	60	3	25	75	100	5
24CEU6CB	Core- XII	Physical Chemistry - II	4	1	-	5	60	3	25	75	100	5
24CEU6CV	Core- XIII	Project	-	-	8	8	96	-	40	60	100	4
24CEU6SA	SEC- IV	Chemistry of Consumer	2	-	-	2	24	3	25	75	100	2
24CEU6DA	DSE- II	Polymer Chemistry	4	-	-	4	48	3	25	75	100	4
24CEU6DB		Food Chemistry										
24CEU6DC		Medicinal Chemistry										
24CEU6DD	DSE- III	Dye and Textile Chemistry	4	-	-	4	48	3	25	75	100	4
24CEU6DE		Dairy Chemistry										
24CEU6DF		Pharmaceutical Chemistry										
Part - IV												
24BCU6AA	AECC-III	Innovation, IPR & Entrepreneurship	2	-	-	2	24		50		50	2
Total			20	2	8	30	360				650	26
*Grand Total										4200	142	

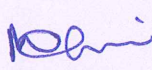
Total Credit should not exceed 142 credits


First year Tamil/ English : 5 hrs

Second year Tamil/ English : 4 hrs

Theory : CIA 25 : ESE 75

Practical/ IT/ Project : CIA 40 : ESE 60


P.C.S. Chairman/HoD
Department of Chemistry
Dr. N. G. P. Arts and Science College
Coimbatore - 641 048

 Dr.N.G.P Arts and Science College		
APPROVED		
BoS- 06-04-24	AC - 17-04-24	GB -



Dr.NGPASC
COIMBATORE | INDIA

B.Sc. Chemistry (Students admitted during the AY 2024-25)

DISCIPLINE SPECIFIC ELECTIVE

Students shall select the desired course of their choice in the listed elective course during Semesters V & VI

Semester V (Elective I)

List of Elective Courses

S. No.	Course Code	Name of the Course
1	24CEU5DA	Industrial Chemistry
2	24CEU5DB	Agricultural Chemistry
3	24CEU5DC	Forensic Chemistry

Semester VI (Elective II)

List of Elective Courses

S. No.	Course Code	Name of the Course
1	24CEU6DA	Polymer Chemistry
2	24CEU6DB	Food Chemistry
3	24CEU6DC	Medicinal Chemistry

Semester VI (Elective III)

List of Elective Courses

S. No.	Course Code	Name of the Course
1	24CEU6DD	Dye and Textile Chemistry
2	24CEU6DE	Dairy Chemistry
3	24CEU6DF	Pharmaceutical Chemistry



GENERIC ELECTIVE COURSE (GE)

The following are the course offered under Generic Elective Course

Semester V

S. No.	Course Code	Course Name
1	24CEU5GA	Chemistry in Daily life

EXTRA CREDIT COURSES

The following are the courses offered under self study to earn extra credits:

Semester III

S. No.	Course Code	Course Name
1	24CEUSSA	Chemistry in the Service of Mankind
2	24CEUSSB	Cosmetic Chemistry



Semester – I							
TAMIL - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24TLU1TA	TAMIL - I	LANGUAGE-I	48	12	-	3

Preamble	மொழிப்பாடங்களின் வாயிலாக தமிழரின் பண்பாடுநாகரீகம், பகுத்தறிவு ஆகியவற்றை அறியச் செய்தல்
	கலை மற்றும் மரபுகளை அறியச் செய்தல்
	மாணவர்களின் படைப்பாக்கத்திறன்களை ஊக்குவித்தல்
Prerequisite	தமிழ் மொழி எழுதி படிக்கும் திறன்

Course Outcomes (Cos)		
CO.No.	Course Outcomes (COs) Statement	Bloom's Tax anomy Knowledge Level
CO1	வாழ்க்கைத்திறன்கள் (Life Skills)-மாணவர்களின் செயலாக்கத்திறனை ஊக்குவித்தல்	K2
CO2	மதிப்புக்கல்வி (Attitude and Value education)	K3
CO3	பாடஇணைச்செயல்பாடுகள் (Co-curricular activities)	K3
CO4	சூழலியல் ஆக்கம் (Ecology)	K4
CO5	மொழி அறிவு (Tamil knowledge)	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1		✓	✓		✓
CO2	✓			✓	
CO3		✓			✓
CO4			✓		
CO5	✓			✓	✓



Syllabus:

Unit	Content	Hrs	Resources
1	<p>மறுமலர்ச்சிக் கவிதைகள்</p> <ol style="list-style-type: none"> இலக்கிய வரலாறு -மறுமலர்ச்சிக் கவிஞர்களின்தமிழ்ப்பணிகள் பாரததேசம்- பாரதியார் படி - பாரதிதாசன் தமிழரின் பெருமை- நாமக்கல்கவிஞர் தமிழ்க் கொலை புரியாதீர்- புலவர் குழந்தை திரைத்தமிழ் <p>அ) 'விஞ்ஞானத்த வளர்க்கப் போறண்டி' எனத்தொடங்கும் பாடல் - உடுமலை நாராயண கவி</p> <p>ஆ) 'சும்மா கிடந்த நிலத்தை' எனத்தொடங்கும் பாடல் - பட்டுக்கோட்டை கல்யாண சுந்தரனார்</p> <p>இ) 'சமரசம் உலாவும் இடமே' எனத்தொடங்கும் பாடல் - மருதகாசி</p> <p>ஈ) 'உன்னை அறிந்தால்' எனத்தொடங்கும் பாடல்-கண்ணதாசன்</p>	13	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=Up55uhkk9zI</p>
2	<p>புதுக்கவிதைகள்</p> <ol style="list-style-type: none"> இலக்கிய வரலாறு- புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் கடமையைச் செய்- மீரா ஓடு ஓடு சங்கிலி - சிற்பி பாலசுப்பிரமணியம் ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான் மரங்கள் - மு.மேத்தா கரிக்கிறது தாய்ப்பால்- ஆரூர் தமிழ்நாடன் ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் ஹைகூ கவிதைகள் - 10 கவிதைகள் 	13	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=dX9ZaNJMac0</p>
3	<p>பெண்ணியம்</p> <ol style="list-style-type: none"> தொலைந்து போனேன் - தாமரை நீரில் அலையும் முகம் - அ. வெண்ணிலா தற்காத்தல் - பொன்மணி வைரமுத்து ஏனிந்த வித்தியாசங்கள்? - மல்லிகா புதையுண்ட வாழ்க்கை - சுகந்தி சுப்ரமணியன் 	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=DLabokqWEg</p>
4	<ol style="list-style-type: none"> இலக்கிய வரலாறு-சிறுகதையின் தோற்றமும் வளர்ச்சியும் கனகாம்பரம்- கு.ப.ராஜகோபாலன் கடிதம்- புதுமைப்பித்தன் பொம்மை - ஜெயகாந்தன் காய்ச்சமரம் - கி. ராஜநாராயணன் காட்டில் ஒருமான்- அம்பை வேட்கை - சூர்யகாந்தன் 	14	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=78u7ITN3OU8</p>



5	<p>பயிற்சிப் பகுதி அ. இலக்கணம் 1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கி எழுதுதல் 2. ர,ற-ல,ழ,ள - ண,ந,னவேறுபாடு - ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல் ஆ. படைப்பாக்கம் 1. கவிதை- எழுதுதல் (15 வரிகள் முதல் 30 வரிகள் வரை) 2. சிறுகதை - எழுதுதல் (குறைந்தது 3 பக்கங்கள்)</p>	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=B3wfM0QL6n8 https://www.youtube.com/watch?v=FchTlqAtwBU https://www.youtube.com/watch?v=gCP3gC-JQU4 https://www.youtube.com/watch?v=p9QOHD12Yeo</p>
	Total	60	

Text book	1.	தமிழ் மொழிப்பாடம் - 2024-2025 தொகுப்பு: தமிழ்த்துறை, டாக்டர் என். ஜி. பி. கலை அறிவியல்கல்லூரி, கோயம்புத்தூர் - 641048.
Reference Books	1.	பேராசிரியர் புலவர் சோம. இளவரசு, தமிழ் இலக்கிய வரலாறு, எட்டாம் பதிப்பு - 2024, மணிவாசகர் பதிப்பகம், சென்னை - 600 108.
	2.	பேராசிரியர் முனைவர் பாக்கியமேரி, முதற் பதிப்பு - 2023, இலக்கணம், இலக்கியவரலாறு, மொழித்திறன் - பூவேந்தன் பதிப்பகம், சென்னை - 600 004.

Journal and Magazines	இலக்கிய இதழ்கள்
E-Resources and Website	https://www.tamilvu.org

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – I							
HINDI – I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24TLU1HA	HINDI – I	LANGUAGE- I	48	12	-	3

Preamble	The writing ability and develop reading skill
	The various concepts and techniques for criticizing literature
	The techniques for expansion of ideas and translation process
Prerequisite	To understand the language Hindi for communication

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Learn the fundamentals of novels and stories	K2
CO2	Understand the principles of translation work	K3
CO3	Expose the knowledge writing critical views on fiction	K3
CO4	Build creative ability	K3
CO5	Apply the power of creative reading	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1		✓	✓		✓
CO2	✓			✓	
CO3		✓			✓
CO4			✓		
CO5	✓			✓	✓



Syllabus:

Unit	Content	Hrs	Resources
1	गद्य – नूतनगद्यसंग्रह (जयप्रकाश)पाठ1- रजियापाठ2- मक्रीलपाठ3- बहतापानीनिर्मला पाठ4- राष्ट्रपितामहात्मागाँधी	13	Text Book
2	कहानीकुंज- डॉ.वी.पी. 'अमिताभ'(पाठ 1-4)	13	Text Book
3	व्याकरण : शब्दविचार (संज्ञा, सर्वनाम,विशेषण)	12	Text Book
4	अनुच्छेदलेखन	12	Text Book
5	अनुवादअभ्यास-III (केवलअंग्रेजीसेहिन्दीमें) (पाठ1 to 10)	10	Text Book
	Total	60	

Text books	1.	प्रकाशक: सुमित्रप्रकाशन 204 लीलाअपाट्मेंट्स, 15 हेस्टिंग्सरोड अशोकनगरइलाहाबाद-211001
	2.	प्रकाशक: गोविन्दप्रकाशनसदरबाजार, मथुराउत्तरप्रदेश-281001
	3.	पुस्तक: व्याकरण प्रदिप - रामदेवप्रकाशक: हिन्दी भवन 36 टेगोर नगर इलाहाबाद-211024
	4.	पुस्तक: व्याकरण प्रदिप - रामदेवप्रकाशक: हिन्दी भवन 36 इलाहाबाद-211024
	5.	प्रकाशक: दक्षिण भारत प्रचार सभा चेन्नई -17
Reference Books		-

Journal and Magazines	-
E-Resources and Website	-

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – I							
MALAYALAM-I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24TLU1MA	MALAYALAM-I	LANGUAGE-I	48	12	-	3

Preamble	The writing ability and develop reading skill
	The various concepts and techniques for criticizing literature, to learn the techniques for expansion of ideas and translation process
	The competency in translating simple Malayalam sentences into English and vice versa
Prerequisite	To understand the language Malayalam for communication

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Learn the fundamentals of novels and stories	K2
CO2	Understand the principles of translation work	K3
CO3	Expose the knowledge writing critical views on fiction	K3
CO4	Apply creative ability	K3
CO5	Build the power of creative reading	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1		✓	✓		✓
CO2	✓			✓	
CO3		✓			✓
CO4			✓		
CO5	✓			✓	✓



Syllabus:

Unit	Content	Hrs	Resources
1	Novel PathummayudeAdu	14	Text book
2	Novel PathummayudeAdu	10	Text book
3	Short Story Nalinakanthi	14	Text book
4	Short Story Nalinakanthi	10	Text book
5	Practical Application Expansion of ideas, General Essay and Translation	12	Text book
	Total	60	

Text books	1.	Vaikkam Muhammed Basheer, "PathummayudeAdu" (NOVEL), DC Books & Kottayam
	2.	T.Padmanabhan, "Nalinakanthi" (Short Story), DC Books & Kottayam.
Reference Books	1.	MalayalaNovel Sahithyam.
	2.	MalayalaCherukathaInnale Innu.

Journal and Magazines	-
E-Resources and Website	-

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – I							
FRENCH - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24TLU1FA	FRENCH - I	LANGUAGE-I	48	12	-	3

Preamble	The competence in general communication skills with oral, written and comprehension & expression
	The culture, life style and the civilization aspects of the French people as well as of France
	The students to acquire competency in translating simple French sentences into English and vice versa
Prerequisite	To understand the language French for communication

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Learn the Basic verbs, numbers and accents	K2
CO2	Apply the adjectives and the classroom environment in France	K3
CO3	Select the Plural, Articles and the Hobbies	K3
CO4	Measure the Cultural Activity in France	K3
CO5	Evaluate the sentiments, life style of the French people and the usage of the conditional tense	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1		✓	✓		✓
CO2	✓			✓	
CO3		✓			✓
CO4			✓		
CO5	✓			✓	✓



Syllabus:

Unit	Content			Hrs	Resources
1	Objectifs de Communication	Tâche	Activités de réception et de production orale	14	Text book Salut I Page 10
	<ul style="list-style-type: none"> • Saluer • Enter en contact avec quelqu'un. • Se présenter. • S'excuser 	En cours de cuisine, premiers contacts avec les membres d'un groupe	<ul style="list-style-type: none"> • Comprendre des personnes qui se saluent. • Échanger pour entrer en contact, se présenter, saluer, s'excuser. • Communiquer avec <i>tu</i> ou <i>vous</i>. • Comprendre les consignes de classe • Épeler son nom et son prénom. Computer jusqu'à 10		
2	<ul style="list-style-type: none"> • Demander de se présenter. • Présenter quelqu'un 	Dans la classe de français, se présenter et remplir une fiche pour le professeur.	<ul style="list-style-type: none"> • Comprendre les informations essentielles dans un échange en milieu professionnel. Échanger pour se présenter et présenter quelqu'un	12	Text book Enchanté I Page 20
3	<ul style="list-style-type: none"> • Exprimer ses goûts. 	Dans un café, participer à une soirée de rencontres rapides et remplir de tâches d'appréciation	<ul style="list-style-type: none"> • Dans une soirée de rencontres rapides comprendre des personnes qui échangent sur elles et sur leurs goûts • Comprendre une personne qui parle des goûts de quelqu'un d'autre 	14	Text book J'adore I Page 30
4	Demander à quelqu'un de faire quelque chose. Demander poliment. Parler d'actions passées. Tu veux bien?	Organiser un programme d'activités pour accueillir une personne importante	Comprendre une personne demande un service à quelqu'un. Demander à quelqu'un de faire quelque chose. <ul style="list-style-type: none"> • Imaginer et raconter au passé à partir de situations dessinées. 	10	Text book Autoévaluation du module I Page 40 – Préparation au DELF A1 page 42 Tu veux bien page 46
5	Practical Application Make in Own Sentences			10	-
Total				60	



Text book	1.	Regine Merieux, Yves Loiseau. 2012. LATITUDES – 1: Méthode de français (Page No: 9-55) Les Editions Dider, Paris, Imprimee en Roumanie par Canale en Janvier
Reference Book	1.	-

Journal and Magazines	-
E-Resources and Website	-

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – I

ENGLISH – I

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24ELU1EA	ENGLISH - I	LANGUAGE- II	48	-	12	3

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> the effect of dialogue, imagery and varied genres any spontaneous spoken discourse and respond to them with proper sentence structure the transactional concept of English language
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Prerequisite	Basic comprehension of Language Skills
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Course Outcomes (COs)

CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Identify the various aspects in poetry	K2
CO2	Infer linguistic and non-linguistic features of the context for understanding and interpreting	K3
CO3	Construct sentences and convey messages effectively in real life situations	K3
CO4	Apply different reading strategies with varying speed	K3
CO5	Prepare modules with their own ideas and present them coherently in a grammatically correct form	K3

Mapping with Program Outcomes:

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	✓	✓	✓		
CO2		✓	✓		
CO3	✓		✓	✓	✓
CO4		✓		✓	
CO5	✓		✓		✓



Syllabus

Unit	Content	Hours	E-Contents / Resources
I	<p>Genre Studies</p> <p>Mathew Arnold: Dover Beach- Author's Biography- title indications- outline- paraphrasing the poem- context of poem- form- poetic devices- enjambment- techniques- Annotations</p> <p>NiyiOsundare: Our Earth Will Not Die- Author's Biography- title indications-outline- paraphrasing the poem- context of poem- form- poetic devices-enjambment- techniques- Annotations</p> <p>Charles Lamb: Christ's Hospital Five and Thirty Years Ago- Author's biography- Narrative structure- Exploration of the text- passage analysis- insight of ideas- cohesion and context- style- language techniques- Annotation</p> <p>James Hanson: A Famed Life - Ten Minute Comedy for Two Women - Author's Biography- Plot Summary-Detailed summary and Analysis- Themes- Important Quotations- Characters- Description - analysis- Terms-Symbols- Critical analysis</p> <p>Sheila Nayampalli Baruna: Alone - Author's Biography-narrative structure- passage analysis- insight of ideas-cohesion and context- style- language techniques</p>	12	Text Book
II	<p>Listening Skills</p> <p>Listening vs. hearing- Types of listening, Tips to enhance Listening Skills, Non-verbal and Verbal signs of active listening- Comprehensive Listening- Listening to pre-recorded audios on speeches, interviews and conversations- Listening Activities- Listening and responding to complaints (formal situation), Listening to problems and offering solutions (informal)</p>	13	britishcouncil.org cambridgeenglish.org
III	<p>Speaking Skills</p> <p>Formal occasions- Introducing oneself, Introducing others, Enquiries and Seeking permission, neural speaking -Making short presentations- Informal occasions- Requests, Offering help, Congratulating, Farewell party, graduation speech- Giving instructions to do a task and to use a device, Giving and asking directions</p>	11	britishcouncil.org cambridgeenglish.org
IV	<p>Reading Skills</p> <p>Study Skills: Skimming and Scanning- Reading different kinds of texts- Types of reading-Developing a good</p>	12	britishcouncil.org cambridgeenglish.org



	reading speed, reading aloud, Referencing skill- Word Power (Denotation and Connotation) - Reading comprehension, Data interpretation –Charts, Graphs, Advertisements - Cognitive Skills- Inference Making - Interpretation		
V	Writing Skills Sentence patterns, Note- making and note taking- Strategies - Paragraph writing: Structure and Principles - Academic Writing - Formal and Informal Letters, Report, Book /Movie Review - Infographics Writing	12	britishcouncil.org cambridgeenglish.org
	Total	60	

Text Books	1.	https://www.poetryfoundation.org/poems/43588/dover-beach .
	2.	https://portal.abuad.edu.ng/lecturer/documents/1586771577our_earth_will_not_die.doc
	3.	http://l-adam-mekler.com/chucktwo.pdf .
	4.	https://offthewallplays.com/wp-content/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf .
	5.	Nation, I. S. P and Jonathan Newton. 2009. Teaching ESL/EFL Listening and Speaking. Routledge, New York, United States of America.
	6.	Prabha, Dr. R. Vithya& S. Nithya Devi. 2019. Sparkle. (1st Edn.) McGraw - Hill Education, Chennai, India.
Reference Books	1.	Rudzka, Brygida -Ostyn, 2003. Word Power: Phrasal Verbs and Compounds: A Cognitive Approach, Mouton de Gruyter, New York, United States of America..
	2.	Swales, John M. & Feak, Christine B. 2012. Academic Writing for Graduate Students: Essential Tasks and Skills, University of Michigan Press, Michigan, United States of America.
	3.	Sen, Leena. 2007. Communication Skills, Second Edition, Prentice Hall India Learning Private Limited, New Delhi, India.
	4.	O. Greene, John. 2021. Essentials of Communication Skill and Skill Enhancement: A Primer for Students and Professionals, Routledge publishers, United Kingdom.

Journal and Magazines	https://academic.oup.com/journals
E-Resources and Website	https://learnenglish.britishcouncil.org/ https://www.cambridgeenglish.org/learning-english/activities-for-learners/
Learning Method	Chalk and Talk/Assignment/Seminar/ Interactive session
Focus of the Course	Skill Development/Employability



Semester - I
CORE I: GENERAL CHEMISTRY - I

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24CEU1CA	GENERAL CHEMISTRY - I	CORE	48	12	-	4

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> • The chemical bonding and the concept of hybridization • The fundamentals of thermodynamics • The concepts of organic chemistry
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Prerequisite	Knowledge on Basic Chemistry
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Course Outcomes (COs)

CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Compare the different atomic model structures	K2
CO2	Relate the types of bonding nature in various molecules based on their hybridization	K2
CO3	Classify the kinetic theory of gases	K2
CO4	Summarize the concept of thermodynamics to different systems	K2
CO5	Illustrate the concepts of organic chemistry	K2

Mapping with Program Outcomes:

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1		✓		✓	✓
CO2	✓		✓		✓
CO3	✓	✓		✓	✓
CO4	✓		✓		✓
CO5		✓	✓	✓	



Syllabus

Unit	Content	Hours	E-Contents / Resources
I	<p>Atomic Structure</p> <p>Rutherford atomic model – Bohr theory of hydrogen atom – Sommerfeld theory – Particle and wave character of electrons – De Broglie's equation – Davisson- Germer experiment – Heisenberg's uncertainty principle – Compton effect – Schrödinger wave equation – Eigen values and Eigen functions – Quantum numbers – Pauli's exclusion principle – Hund's rule and Aufbau principle</p>	12	Text Book
II	<p>Chemical Bonding</p> <p>Types of bonds – Ionic – Covalent – Coordinate – Metallic – Weaker bonds - Hybridization involving s, p and d orbitals – Properties of ionic, covalent and coordinate compounds – VSEPR theory- Valence bond theory. Molecular orbital theory – Molecular orbital configurations of simple homo nuclear and hetero nuclear diatomic molecules – Comparison between VBT and MOT</p>	12	Reference Book
III	<p>Gaseous State</p> <p>Kinetic molecular theory of gases – Maxwell's distribution of molecular velocities (derivation not needed) – Collision diameter – Collision number, collision frequency – Mean free path – Real and ideal gases – Deviation of real gases from ideal behavior-Equations of state -Derivation of Van der Waal's equation. Various methods for expressing concentrations of solutions – Vapour pressure of liquids –ideal and non-ideal solutions – Raoult's law – Vapour pressure of non-ideal solutions – Vapour pressure composition and boiling point composition curves</p>	12	Text Book
IV	<p>Thermodynamics</p> <p>System-Isolated system - Open system - Closed system. Surroundings - Extensive and intensive properties - Types of process. First law of thermodynamics - Internal energy. State function and path function - Exact and inexact differentials - Enthalpy of system, enthalpy of vaporization, enthalpy of fusion - Heat capacity of a system Relation between Cp and Cv in gaseous system. Joule Thomson effect, Joule Thomson coefficient and inversion temperature. Heat of neutralization - Heat of solution, heat of combustion, Kirchoff's equation - Flame and explosion temperature - Bomb calorimeter - Measuring enthalpy of combustion, Hess's law-Bond energy - Calculations of bond energy</p>	12	NPTEL



V	Basic Organic Chemistry Electronic displacements: Inductive effect, electromeric effect, resonance hyperconjugation and steric effect. Strength of organic acids and bases - Factors affecting pK values. Cleavage of bonds: homolysis and heterolysis. Reactive intermediates: Structure and stability of carbocations, carbanions and free radicals	12	You Tube Videos
Total		60	

Text Book	1.	Puri. B.R, Sharma. L.R and Pathania. M.S, 2017, "Principles of Physical Chemistry", 47 th edition, John Wiley and Sons & USA
Reference Books	1.	Madhan. R.D, 2016, "Modern Inorganic Chemistry", 10 th edition, Mc Graw Hill Company & USA
	2.	Lee. J.D, 2002, "A New Concise Inorganic Chemistry", 5 th edition, ELBS &UK
	3.	Jain. M.K and Sharma. S.C, 2012, "Modern Organic Chemistry", Vishal publishing Co & New Delhi
	4.	Puri. B.R, Sharma. L.R and Kalia. K.C, 2016, "Principles of Inorganic Chemistry", Vishal Publishing & Co & New Delhi

Journal and Magazines	https://www.lamar.edu/arts-sciences/_files/documents/chemistry-biochemistry/dorris/chapter8.pdf
E-Resources and Website	http://www.cnm.manchester.ac.uk/people/jonathan/CH0001081100.pdf

Learning Method	Chalk and Talk/Assignment/Seminar
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Focus of the Course	Skill Development/Employability
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24CEU1CP	VOLUMETRIC ANALYSIS AND PREPARATION	SEMESTER I
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Total Credits: 3
Total Instructions Hours: 72 h

S.No	Contents
1	Estimation of HCl by NaOH using a standard oxalic acid solution
2	Estimation of Na ₂ CO ₃ by HCl using a standard Na ₂ CO ₃ Solution.
3	Estimation of oxalic acid by KMnO ₄ using a standard oxalic acid solution
4	Estimation iron(II) sulphate by KMnO ₄ using a standard Mohr's salt solution.
5	Estimation of calcium(II) by KMnO ₄ using standard oxalic acid solution
6	Estimation of iron(II) by potassium dichromate using standard Mohr's salt solution
7	Estimation of KMnO ₄ by thiosulphate using a standard potassium dichromate solution
8	Estimation of copper(II) sulphate by K ₂ Cr ₂ O ₇ solution
9	Preparation of Tetraamminecopper(II)sulphate
10	Preparation of Hexamminecobalt(II) chloride
11	Preparation of Prussian blue
12	Preparation of Hexathiourealead(II) nitrate
13	Separation of dyes using Paper Chromatography (Under DBT Star College Scheme)
14	Separation of dyes using Thinlayer Chromatography (Under DBT Star College Scheme)

Note: Any 10 Experiments



- 1 Venkateswaran. V, Veeraswamy. R and Kulandaivelu. A.R, 2017, "Principles of Practical Chemistry", 1st Edition, Sultan Chand & Sons & New Delhi
- 2 Mendham. J, Denney. R.C, Bames. J.D and Thomas. M, 1989. "Vogel's Text book of Quantitative Analysis", 6th Edition, Pearson Education & UK
- 3 Gopalan. R, Subramanian. P.S and Rengarajan. K, 2004, "Elements of Analytical Chemistry", 1st Edition, S. Chand and Sons & New Delhi
- 4 Giri. S, Bajpai. D.N and Panday. O.P, 2013, "Practical Chemistry Vol. I & II", 30th Edition, S. Chand & Company, New Delhi



Semester – I
IDC: PHYSICS - I

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24PYU1IM	PHYSICS - I	IDC	3	-	4	5

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> • The properties of electricity, crystals, and electronics • The thermal, and optical properties of the materials. • The basics of digital electronics
Prerequisite	Knowledge On Basic Mathematics and Properties of Matter and Electronics

Course Outcomes (COs)

CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Explain the applications of electrical circuits	K2
CO2	Classify different types of bonds, bond theory and energy gaps	K2
CO3	Develop the different kinds of spectral formation	K3
CO4	Demonstrate the working of diodes and rectifiers	K2
CO5	Experiment with the logic gates	K3

Mapping with Program Outcomes:

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	✓			✓	✓
CO2		✓			
CO3	✓		✓		✓
CO4					✓
CO5		✓		✓	



Syllabus

Unit	Content	Hours	E-Contents / Resources
I	<p>Electricity</p> <p>Capacitors - Types of capacitors - Spherical capacitor - Cylindrical capacitor - Carey-Foster's bridge - Working of potentiometer - Calibration of voltmeter - Calibration of ammeter</p> <p>1. Calibration of low range voltmeter using potentiometer</p> <p>2. Determination of unknown resistance using Carey Foster's bridge</p> <p>3. Calibration of low range ammeter using potentiometer</p>	20 h	Text Book
II	<p>Crystals</p> <p>Ionic crystals - Covalent crystals - Metallic bond - Band theory of solids - Tunnel diodes - Energy bands - Superconductivity - Bound electron pairs - Hall effect - Experimental determination of hall coefficient.</p> <p>4. Determination of band gap of semiconductors using four probe method</p> <p>5. Determination of band gap of semiconductor by thermal method</p>	20 h	Reference Book
III	<p>Optics</p> <p>Interference in the thin film - Air wedge - Thickness of a thin wire - Newton's rings - Determination of wavelength using Newton's rings - Theory of transmission grating - Normal incidence</p> <p>6. Determination of wavelength of mercury lines by grating minimum deviation method</p> <p>7. Determination of the radius of curvature in Newton's rings</p>	20 h	Text Book
IV	<p>Analog Electronics</p> <p>Bridge rectifiers - Band gap determination using post office box - Transistor characteristics in common base and common emitter mode - Transistor single stage amplifier- Expression for input impedance - Output impedance and current gain</p> <p>8. Characterization of junction diode</p>	12 h	NPTEL



	9.To determine band gap using Post office box method		
V	Digital Electronics 1's and 2's complement of a binary number and binary arithmetic - Steps in the fabrication of Monolithic IC's - General applications of IC's - Registers - Flip flops - JK flip flops - Half adder - Full adder 10.Verification of logic gate truth table. 11.Verification of De Morgan's law. 12.Construction and working of IC regulated power supply.	12 h	You Tube Videos
	TOTAL	84 h	

Text Book	1.	Murugesan R., 2016, "Modern Physics", 18 th Edition, S.Chand and Co, New Delhi.
	2.	E-book: Arthur B, 2003, "Concepts of Modern Physics", 6 th Edition, McGraw-Hill, New York.
Reference Books	1.	Sedha R.S., 2004, "A text book of Digital Electronics", 1 st Edition. S. Chand & Co, New Delhi.
	2.	David H, Robert R, Jearl W, 2014, "Fundamentals of Physics", 10 th Edition. John Willy Company Hoboken, New Jersey, United States.
	3.	Gupta Kumar, 2011, Solid State Physics, K Nath and co Meerut.
	4.	Brijal N and Subramanian, "Text book of optics", S.Chand& Company, New Delhi

Journal and Magazines	[E-book] Serway A.R., Jewett W.J.,2014, "Physics for Scientists and Engineers with Modern Physics",9 th Edition,Brooks/Cole, USA.
E-Resources and Website	Weblink: https://www.askiitians.com/revision-notes/physics/solid-and-electronic-device/
Learning Method	Chalk and Talk/ Assignment/Seminar/ Interactive session
Focus of the Course	Skill Development/Employability



Semester – I

AECC I: ENVIRONMENTAL STUDIES

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24MBU1AA	ENVIRONMENTAL STUDIES	AECC	24	-	-	2

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none"> • Multi-disciplinary aspects of Environmental studies • Importance to conserve the biodiversity • Causes of Pollution and its control 	
Prerequisite	Aware the basics of environmental components	
Course Outcomes (Cos)		
CO Number	Course Outcomes (Cos) Statement	Bloom's Taxonomy Knowledge Level
CO1	To understand the importance of natural resources in order to conserve for the future	K1
CO2	To impart knowledge on Natural resources and its conservation	K2
CO3	To impart knowledge on Biodiversity and its conservation	K3
CO4	To create awareness on effects, causes and control of air, water, soil and noise pollution etc.,	K4
CO5	To build awareness about sustainable development and Environmental protection	K1

Mapping with Programme Outcomes					
Cos/POs	PO1	PO2	PO3	PO4	PO5
CO1	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓
CO4	✓	✓	✓		
CO5	✓	✓	✓	✓	✓



Syllabus

Unit	Content	Hours	E-Contents / Resources
I	Introduction to Environmental studies & Ecosystems: components of environment – atmosphere, hydrosphere, lithosphere and biosphere. Scope and importance - Energy flow in an ecosystem: food chain, food web and ecological succession.	5	Text book and Website
II	Natural Resources: Renewable and Non-renewable Resources: Land Resources and land use - Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. Conflicts over water (international & inter-state). Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs.	5	Text book and Website
III	Biodiversity and Conservation: Global biodiversity hot spots. India as a mega-biodiversity nation; Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.	4	Text book and Website
IV	Environmental Pollution: types, causes, effects and controls; Air, water, soil, chemical and noise pollution. Nuclear hazards and human health risks. Environment Laws: Environment Protection Act; Prevention & Control of Pollution Act – Air & Water. Wildlife Protection Act; Forest Conservation Act;	5	Text book and Website
V	Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Role of Information Technology in Environment and human health. Role of the Colleges, Teachers and Students in village adoption towards clean, green and make in villages in various aspects.	5	Text book and Website
	Total	24	




Text Book	1.	<i>Carson, R.</i> 2002. Silent Spring. <i>Houghton Mifflin Harcourt</i>
	2.	<i>Gadgil, M., & Guha, R.</i> 1993. This Fissured Land: An Ecological History of India. <i>Univ. of California Press.</i>
Reference Books	1.	<i>Gleeson, B. and Low, N. (eds.)</i> 1999. Global Ethics and Environment, London, Routledge.
	2.	<i>Gleick, P.H.</i> 1993. Water in Crisis. <i>Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.</i>
	3.	<i>Groom, Martha J. Gary K. Meffe, and Carl Ronald carroll.</i> 2006, Principles of Conservation Biology. <i>Sunderland: Sinauer Associates.</i>
	4.	<i>Grumbine, R. Edward, and Pandit, M.K.</i> 2013. Threats from India's Himalaya dams. <i>Science, 339: 36-37.</i>

Journal and Magazines	https://www.hzu.edu.in/bed/E%20V%20S.pdf
E-Resource and Websites	https://www.ugc.gov.in/oldpdf/modelcurriculum/env.pdf

Learning Methods	Chalk and Talk/ Seminar/ Assignment
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Focus of the Course	Skill Development/Employability/Social Awareness and Environment
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26-04-24	17-04-24	



