



Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
Approved by Government of Tamil Nadu & Accredited by NAAC with 'A++' Grade (3rd Cycle - 3.64 CGPA)
Dr. N.G.P.-Kalapatti Road, Coimbatore-641 048, Tamil Nadu, India.
Website: www.dnpgpasc.ac.in | Email: info@dnpgpasc.ac.in | Phone: +91-422-2369100

REGULATIONS 2024-25 for Under Graduate Programme

(Outcome Based Education model with Choice Based Credit System)

B.Sc. FOOD SCIENCE AND NUTRITION

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

Eligibility:

A candidate who has passed in Higher Secondary Examination with any Academic stream or Vocational stream as one of the subject under Higher Secondary Board of Examination and as per the norms set by the Government of Tamil Nadu or an Examination accepted as equivalent thereto by the Academic Council, subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the **Bachelor of Science in Food Science and Nutrition Degree Examination** of this College after a course of 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 enable the students to implement the basic food science in operation.
2. To provide basic knowledge and practice to enhance the quality of life through the improvement of human health and nutritional status.
3. To develop skill and techniques in food preparation with conservation of nutrients and palatability using cooking methods generally employed.
4. To help the students to contribute proper utilization of foods and prevent food ravages.
5. To understand the prevalence of malnutrition in Indian scenario and gain knowledge on effective methods to combat malnutrition



PROGRAMME OUTCOMES

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

PO Number	PO Statement
PO1	Acquire knowledge and develop aptitude in Food Science and Nutrition intended for potential career opportunities.
PO2	Build self-empowerment in food Science and Nutrition and develop effective communication skills sufficient for entry in preprofessional practice.
PO3	Apply skills by planning, implementing and evaluating diets to the community in the current scenario.
PO4	Interpret and utilize nutrition techniques in developing novel products to improve the health status of society and promote enterprism ^{entrepreneurism}
PO5	Develop professional attributes and portfolio in Food Science and Nutrition that are adopted to serve in diverse professional and community organizations.



Guidelines for Programmes offering Part I & Part II for Four Semesters:

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

B.Sc. Food Science and Nutrition

A.Y
24-25


Course Code	Course Category	Course Name	L	T	P	Duration		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												
24FNU1CA	Core-I	Fundamentals of Food Science	4	1	-	5	60	3	25	75	100	4
24FNU1CB	Core-II	Chemistry of Foods	4	1	-	5	60	3	25	75	100	4
24FNU1CP	Core practical-I	Food Science	-	-	5	5	60	3	40	60	100	2
24CEU1IA	IDC-I	Chemistry	3	-	-	3	36	3	25	75	100	3
Part-IV												
24MBU1AA	AECC-I	Environmental Studies	2	-	-	2	24	-	50	-	50	2
Part – V												
24FNU1XA	Extension Activity	NSS/NCC/YRC /RRC/Yoga/ Sports/Club	-	-	-			-	50		50	1
Total			21	3	6	30	360	-	-	-	700	22

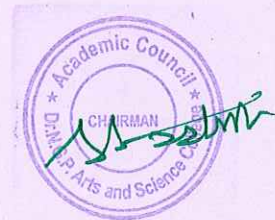


Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Second Semester												
Part-I												
24TLU2TA	Language-I	Tamil-II	4	1	-	5	60	3	25	75	100	3
24TLU2HA		Hindi-II										
24TLU2MA		Malayalam - II										
24TLU2FA		French-II										
Part- II												
24ELU2EA	Language-II	English- II	4	-	1	5	60	3	25	75	100	3
Part-III												
24FNU2CA	Core-III	Principles of Nutrition	4	1	1	6	72	3	25	75	100	4
24FNU2CP	Core Practical-II	Qualitative Nutrient Analysis		-	5	5	60	3	40	60	100	2
24CEU2IM	IDC Practical-I	Applied Chemistry	3	-	4	7	84	3	40	60	100	5
Part-IV												
24TLU2AA/ 24TLU2AB/ 24CRU2AA	AECC-II	Basic Tamil/ Advance Tamil /Human Rights and Women's Rights	2	-	-	2	24	-	50	-	50	2
Part-V												
24FNU2XA	Extension Activity	NSS/NCC/YRC/ RRC/Yoga/Sports							50	-	50	1
Total			17	2	11	30	360				600	20



BoS Chairman/HoD
Department of Food Science & Nutrition
Dr. N. G. P. Arts and Science College
Coimbatore - 641 048

 Dr.N.G.P. Arts and Science College		
APPROVED		
BoS-18 th 8/11/24	AC - 18 th 26/11/24	GB -



Dr.NGPASC
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B.Sc. Food Science and Nutrition (Students admitted during the AY 2024-25)

Course Code	Course Category	Course Name	L	T	P	Duration		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												
24FNU3CA	Core -IV	Nutrition Through Life Span	4	1	-	5	60	3	25	75	100	4
24FNU3CB	Core -V	Human Physiology	3	1	-	4	48	3	25	75	100	3
24FNU3CC	Core -VI	Institutional Management	3	1	-	4	48	3	25	75	100	3
24FNU3CP	Core Practical-III	Nutrition Through Life Span	-	-	4	4	48	3	40	60	100	2
24BCU3IA	IDC-III	Biochemistry - I	3	-	-	3	36	3	25	75	100	3
24FNU3SA	SEC- I	Basics of Research Techniques-Computer Application	2	-	-	2	24	3	25	75	100	2
Total			21	5	4	30	360				800	23




Course Code	Course Category	Course Name	L	T	P	Duration		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												
24FNU4CA	Core-VII	Dietetics	4	-	-	4	48	3	25	75	100	4
24FNU4CP	Core Practical-IV	Dietetics	-	-	4	4	48	3	40	60	100	2
24FNU4CB	Core - VIII	Perspective Psychology	4	-	-	4	48	3	25	75	100	4
24BCU4IA	IDC-IV	Biochemistry -II	3	-	-	3	36	3	25	75	100	3
24BCU4IP	IDC Practical-II	Biochemistry	-	-	4	4	48	3	40	60	100	2
24FNU4SA	SEC-II	Functional Foods	2	1	-	3	36	3	25	75	100	2
Total			19	3	8	30	360				800	23




Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Fifth Semester												
Part-III												
24FNU5CA	Core-IX	Food Preservation	4	-	-	4	48	3	25	75	100	4
24FNU5CB	Core-X	Fundamentals of Food Microbiology	4	-	-	4	48	3	25	75	100	4
24FNU5CC	Core- XI	Food Processing	4	-	-	4	48	3	25	75	100	4
24FNU5CD	Core - XII	Food Safety and Quality Control	4	-	-	4	48	3	25	75	100	4
24FNU5CV	Core-XIII	Project work and viva voce	-	-	-			3	25	75	100	2
24FNU5CP	Core Practical -V	Food Preservation	-	-	4	4	48	3	40	60	100	2
24FNU5SP	SEC-III	Quantitative Nutrient Analysis	-	-	4	4	48	3	40	60	100	2
24FNU5DA	DSE-I	Post-Harvest Technology	4	-	-	4	48	3	25	75	100	4
24FNU5DB		Clinical Nutrition										
24FNU5DC		Food Commodities										
24FNU5TA	IT	Industrial Training	-	-	-			3	40	60	100	2
Part – IV												
	GE		2	-	-	2	24	3	50	-	50	2
Total			22	-	8	30	360				950	30



CourseCode	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Sixth Semester												
Part-III												
24FNU6CA	Core-XIV	Community Nutrition	4	-	-	4	48	3	25	75	100	4
24FNU6CB	Core-XV	Food Product Development & Marketing	4	-	-	4	48	3	25	75	100	4
24FNU6CP	Core Practical-VI	Community Nutrition	-	-	5	5	60	3	40	60	100	2
24FNU6CQ	Core Practical -VII	Food Product Development	-	-	5	5	60	3	40	60	100	2
24FNU6SA	SEC-IV	Indigenous Foods	2	-	-	2	24	3	25	75	100	2
24FNU6DA	DSE-II	Food Handling and Storage	4	-	-	4	48	3	25	75	100	4
24FNU6DB		Nutrition Care Process										
24FNU6DC		Unit operation in Food Industry										
24FNU6DD	DSE-III	Basics of Food Packaging	4	-	-	4	48	3	25	75	100	4
24FNU6DE		Diet Counseling										
24FNU6DF		Entrepreneurship In Food Industry										
Part-IV												
24BIU6AA	AECC-III	Innovation and IPR	2	-	-	2	24	-	50	-	50	2
Total			20	-	10	30	360				750	24
		Grand Total									4600	142


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05-04-24	17-04-24	



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	24FNU5DA	Post-Harvest Technology
2	24FNU5DB	Clinical Nutrition
3	24FNU5DC	Food Commodities

Semester VI (Elective II)

List of Elective Courses

S. No.	Course Code	Name of the Course
1	24FNU6DA	Food Handling and storage
2	24FNU6DB	Nutrition Care Process
3	24FNU6DC	Unit operation in Food Industry

Semester VI (Elective III)

List of Elective Courses

S. No.	Course Code	Name of the Course
1	24FNU6DD	Basics of Food Packaging
2	24FNU6DE	Diet Counseling
3	24FNU6DF	Entrepreneurship In Food Industry



GENERIC ELECTIVE COURSE (GE)

The following are the course offered under Generic Elective Course

Semester V

S. No.	Course Code	Course Name
1	24FNU5GA	Food Preservation

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	24FNUSSA	Food Fortification
2	24FNUSSB	Nutrition Education



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 Taxonomy 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	மறுமலர்ச்சிக் கவிதைகள் 1. இலக்கிய வரலாறு -மறுமலர்ச்சிக் கவிஞர்களின்தமிழ்ப்பணிகள் 2. பாரததேசம்- பாரதியார் 3. படி - பாரதிதாசன் 4. தமிழரின் பெருமை- நாமக்கல்கவிஞர் 5. தமிழ்க் கொலை புரியாதீர்- புலவர் குழந்தை 6. திரைத்தமிழ் அ) 'விஞ்ஞானத்த வளர்க்கப் போறண்டி' எனத்தொடங்கும் பாடல் - உடுமலை நாராயண கவி ஆ) 'சும்மா கிடந்த நிலத்தை' எனத்தொடங்கும் பாடல் - பட்டுக்கோட்டை கல்யாண சுந்தரனார் இ) 'சமரசம் உலாவும் இடமே' எனத்தொடங்கும் பாடல் - மருதகாசி ஈ) 'உன்னை அறிந்தால்' எனத்தொடங்கும் பாடல்- கண்ணதாசன்	13	தமிழ்மொழிப் பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=Up55uhkk9zI
2	புதுக்கவிதைகள் 1. இலக்கிய வரலாறு- புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 2. கடமையைச் செய்- மீரா 3. ஓடு ஓடு சங்கிலி - சிற்பி பாலசுப்பிரமணியம் 4. ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான் 5. மரங்கள் - மு.மேத்தா 6. கறிக்கிறது தாய்ப்பால்- ஆரூர் தமிழ்நாடன் 7. ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் 8. ஹைகூ கவிதைகள் - 10 கவிதைகள்	13	தமிழ்மொழிப் பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=dX9ZaNJMa co
3	பெண்ணியம் 1. தொலைந்து போனேன் - தாமரை 2. நீரில் அலையும் முகம் - அ. வெண்ணிலா 3. தற்காத்தல் - பொன்மணி வைரமுத்து 4. ஏனிந்த வித்தியாசங்கள் ? - மல்லிகா 5. புதையுண்ட வாழ்க்கை - சுசந்தி சுப்ரமணியன்	10	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=DLaBokqWE dg
4	1.இலக்கிய வரலாறு-சிறுகதையின் தோற்றமும் வளர்ச்சியும் 2. கனகாம்பரம்- கு.ப.ராஜகோபாலன் 3. கடிதம்- புதுமைப்பித்தன்	14	தமிழ்மொழிப் பாடம் முதற்பருவம்



	4. பொம்மை - ஜெயகாந்தன் 5. காய்ச்சமரம் - கி. ராஜநாராயணன் 6. காட்டில் ஒருமான்- அம்பை 7.வேட்கை - சூர்யகாந்தன்		2024-2025 https://www.youtube.com/watch?v=78u7iTN3OU8
5	பயிற்சிப் பகுதி அ. இலக்கணம் 1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கிஎழுதுதல் 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)	10	தமிழ்மொழிப் பாடம் 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
	Total	60	

Text book	1.	தமிழ் மொழிப்பாடம் – 2024-2025தொகுப்பு: தமிழ்த்துறை, டாக்டர்என்.ஜி.பி. கலைஅறிவியல்கல்லூரி, 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	இலக்கியஇதழ்கள்
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 लीलाअपार्टमेंट्स, 15 हेस्टिंग्सरोड अशोकनगरइलाहाबाद-211001
	2.	प्रकाशक: गोविन्दप्रकाशनसदरबाजार, मथुराउत्तरप्रदेश-281001
	3.	पुस्तक: व्याकरण प्रदिप - रामदेवप्रकाशक: हिन्दी भवन 36 टेंगोर 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	24TLUIFA	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 <ul style="list-style-type: none"> • Saluer • Entrer en contact • avec quelqu'un. • Se présenter. • S'excuser 	Tâche En cours de cuisine, premiers contacts avec les membres d'un groupe	Activités de réception et de production orale <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	14	Text book Salut I Page 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, Imprimé 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	This course has been designed for students to learn and understand <ul style="list-style-type: none">the effect of dialogue, imagery and varied genresany spontaneous spoken discourse and respond to them with proper sentence structurethe transactional concept of English language	
Prerequisite	Basic comprehension of Language Skills	
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>Niyi Osundare: 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	Text Book
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	Text Book
IV	<p>Reading Skills</p> <p>Study Skills: Skimming and Scanning- Reading different kinds of texts- Types of reading-Developing a good reading speed, reading aloud, Referencing skill- Word</p>	12	Text Book



	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	Text Book
	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 : FUNDAMENTALS OF FOOD SCIENCE

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24FNU1CA	FUNDAMENTALS OF FOOD SCIENCE	CORE	48	12	-	4

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none">• Principles and various methods of cooking foods• composition of various foodstuffs• apply food science knowledge to describe functions of ingredients in food	
Prerequisite	Basic knowledge on Food Science	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Describe the various sustainable food practices like energy and nutrient conservation methods	K3
CO2	Interpret the physical , chemical changes occurring in the nutritive constituents of different foods during various cooking processes	K2
CO3	Demonstrate the methods of beverage preparation. Outline medicinal uses of Spices and Condiments	K3
CO4	Illustrate milk processing Identify uses, methods and experiment with effects of cooking egg	K3
CO5	Analyze and understand the principles in cooking and its effect on sensory attributes and nutrients	K4

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>Food Groups & Cereal</p> <p>Introduction to Food Science: Food groups- 4 (ICMR), 5, 7 and 11, functional food groups-energy yielding, body building protective and regulatory foods (only sources), food pyramid and my plate.</p> <p>Methods of cooking: Objectives of cooking. Cooking methods – Dry heat and moist heat methods, microwave and solar cooking</p> <p>Cereals: Structure and composition of rice and wheat, parboiled rice, Fermentation of Cereal- Mechanism of fermentation and changes occurring during fermentation. Indian fermented foods (idly, dhokla, and bread), role of cereals in cookery</p> <p>Millets: Classification, Nutritive value of Ragi, Jowar and Maize.</p>	12	Textbook
II	<p>Pulses, Fruits and Vegetables</p> <p>Pulses and legumes: Varieties of pulses, legumes and grams, composition, nutritive value, germination and malting of grain, anti-nutritional factors, cooking quality of pulses.</p> <p>Fruits: Classification, composition and nutritive value, changes during ripening, enzymatic browning and its prevention methods.</p> <p>Vegetables: Classification, composition and nutritive value, selection and preparation for cooking, changes and loss of nutrients during cooking</p>	12	Textbook
III	<p>Beverages, Fats and Spices</p> <p>Beverages - Classification, milk-based beverages-methods of preparing tea and coffee, fruit-based beverages, malted beverages and carbonated non-alcoholic beverages.</p> <p>Fats and Oils: Types of oils, function of fats and oils, fat substitutes</p> <p>Spices and Condiments: Functions and medicinal values of Cumin, Pepper, Fenugreek, Cinnamon, Cloves, Cardamom, Onion, Turmeric, Ginger and Garlic spices, active principle of spices.</p> <p>Herbs – Basil, Wheat grass, Aloe vera, Oregano – An overview</p>	12	Textbook



	Difference test-paired comparison and duo –trio test, Rating test –ranking, hedonic, composite scoring test.		
IV	<p>Milk and Egg</p> <p>Milk – Composition and nutritive value, kinds of milk, physical properties of milk, pasteurization and homogenization of milk, changes in milk during heat processing, preparation of fermented (cheese) and non-fermented (milk powder), role of milk and milk products</p> <p>Egg - Structure, composition, selection, nutritive value, anti-nutrients, Effect of cooking on eggs. Evaluation of egg quality uses of egg in cookery, foam formation and factors affecting foam formation</p>	12	Textbook
V	<p>Non-Vegetarian Foods</p> <p>Meat -Structure, composition, nutritive value, selection of meat, post mortem changes in meat, aging, tenderness and curing. Methods of cooking meat and their effects.</p> <p>Poultry: Classification, composition, nutritive value, selection, methods of cooking. Fish - Structure, composition, nutritive value, selection of fish, methods of cooking and effects</p>	12	Textbook
	Total	60	

Text Books	1.	Srilakshmi B, 2015, “Food Science”, 3rd Edition, New Age International, New Delhi
	2.	ShakunthalaManay and ShadakhraSwamy M., 2008, “Food Facts and Principles”, Third Edition, New Age International Publishers, New Delhi
Reference Books	1.	Mudambi .R. Sumathiand Rajagopal M.V, 2008, “Food Science, New Age International Publishers, New Delhi.
	2.	Thangam E. Philip, 1998, “Modern Cookery“, Volume II, Orient Longman, II Edition, Hyderabad

Journal and Magazines	International Journal of Food Science
E-Resources and Website	www.fao.org www.wfp.org

Learning Method	Chalk and Talk / Interactive session/ Assignment
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development
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Semester – I

CORE - II: CHEMISTRY OF FOODS

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24FNU1CB	CHEMISTRY OF FOODS	CORE	48	12	-	4

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none">• Composition and chemistry involved in properties of foods.• Physico chemical changes in foods during preparation.• Principles that underly the biochemical - enzymatic techniques in food analysis and instrumentation.	
Prerequisite	To learn the chemical and physical properties of foods.	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Emphasize the physico - chemical properties of foods - water activity, types of water, colloidal system.	K1
CO2	Enumerate the changes in the properties of starch, stages of stages of sugar cookery and crystallization.	K2
CO3	Endetail on changes in wheat proteins, pulse proteins, milk proteins, egg proteins and vegetable proteins	K3
CO4	Determine the physical and chemical properties of fats and oils, changes in fat during cooking.	K4
CO5	Distinguish the properties of enzymes, pigments, pectins , spices and condiments.	K5

Mapping with Program Outcomes:

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



Syllabus

Unit	Content	Hours	E-Contents / Resources
I	Physico-chemical Properties of Foods Moisture in foods, Hydrogen Bonding ,Structure of water and Ice, States of water, Types of Water - Free Water, Bound Water, Entrapped water, water Activity in Foods - Measurement and control of Water Activity, Determination of Moisture Content in Foods, Dispersion, Sols, Gels, Foams, Colloids and Emulsions.	12	Textbook
II	Chemistry of Starch and Sugars Components of Starch, Swelling of Starch Granules, Gel Formation, Factors affecting Gel Formation, Retro gradation, Syneresis, Dextrinization and Hydrolysis of Starch. Effect of Sugar, Acid, Alkali, and Surface Active Agents on Starch. Sugar - Physical and Chemical Properties of Sugars - Hygroscopicity, Solubility , Sweetness, Chemical Properties - Hydrolysis, Caramelization and Maillard Reaction - Non Enzymatic Browning, Types of Candies, Crystallization, Factors affecting Crystallization of Sugar, Sugar products and Stages of Sugar Cookery.	12	Textbook
III	Chemistry of Proteins Chemistry of Wheat Proteins, Structure, Gluten Formation, Factors affecting gluten formation, Effect of Soaking, Fermentation and Germination of Pulse Proteins, Malting of Pulse Proteins, Protein Denaturation, Properties of Egg Protein, Chemistry of Milk Protein, Protein Changes in Milk, Egg and Meat Proteins during action of heat, Changes in Vegetable Proteins due to Action of Acid, Heat and Alkali.	12	Textbook
IV	Chemistry of Fats and Oils Physical Properties of Fats and Oils - Melting Points, Plasticity and Isomerisation Chemical Properties of Fats and Oils - Rancidity and Polymerization, Modification of Fats - Hydrogenation, Winterization, Emulsification, Tenderization Decomposition of Triglycerides, Shortening Power of Fats, Changes in Fats and Oils during Heating, Smoking Point of oil, Factors Affecting Fat Absorption in Food, Fat Deterioration, Fat Replacers.	12	Textbook
V	Chemistry of Pectic Substances , Plant Pigments, Spices and Condiments Enzymes -Definition, Chemical Classification, Properties of Enzymes, Importance of Enzymes, Enzymatic	12	Textbook



	Browning, Pectins and Phenolic Compounds. Pigments - Types of Plant Pigments - Water and Fat Soluble Pigments, Properties and Food Sources. Properties and Active Principles of Spices and Condiments. Flavour Enhancers.		
	Total	60	

Text Books	1.	Usha Chandrasekar, 2002 "Food Science and Applications in Indian Cookery", Phoenix Publishing House PVT LTD., New Delhi.
	2.	Lillian Hoagland Meyer, 2004, "Food Chemistry" CBS Publishers & Distributors Pvt. Ltd., Delhi.
Reference Books	1.	Srilakshmi, 2021, "Food Science", Eighth Edition, New Age International Publishers, New Delhi.
	2.	Shakunthalamany and Shadakharswamy, 2008, "Food Facts and Principles" Third Edition, New Age International Publishers, New Delhi.
	3.	Belitz H.D. Grosch W, Schieberle. P, 2009, "Food Chemistry" Springer Publishers, Berlin.
	4.	Alex V Ramani, 2002, "Food Chemistry" MJP Publishers, Chennai.
	5.	Mudambi, R. Sumathi and Rajagopal M.V. 2008, "Food Science" New Age International Publishers, New Delhi.

Journal and Magazines	https://pubs.acs.org/journal/joceah https://www.sciencedirect.com/journal/food-chemistry
E-Resources and Website	http://foodb.ca

Learning Method	Chalk and Talk/ Interactive session /Assignment
Focus of the Course	Skill Development/ Employability



24FNU1CP	FOOD SCIENCE	SEMESTER I
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Total Credits: 2
Total Instructions Hours: 60 h

S.No	Contents
1	Food group - Grouping of foods, discussion on nutritive value.
2	Measuring ingredients - Methods of measuring different types of foods – grains, flours and liquids, Determination of edible portion percentage.
3	Moist heat methods - Boiling, Simmering, Steaming and Pressure cooking.
4	Dry heat methods - Saueting, braising, baking. Fat as a medium for cooking - shallow and deep fat frying.
5	Cereals - Methods of cooking fine and coarse cereals. Examination of starch. Common preparation with Cereals.
6	Pulses - Cooking of soaked, unsoaked pulses, germination and fermentation of pulses. Common preparation with pulses.
7	Vegetables - Principles of cooking vegetables, Experimental cookery using vegetables pigments of different colors and textures. Common preparation with vegetables.
8	Preparation of beverages, soups and salads.
9	Fruits - Prevention of darkening in fruits and vegetables. Fruit salad, Common preparation with Fruits.
10	Milk - Experimental cookery – cheese curry and cooking vegetables in milk, Coagulation of milk proteins, preparation of paneer and curd common preparations with milk.
11	Fleshy foods - Fish, meat and poultry - preparations.
12	Experimental cookery of Egg - boiled egg, poached egg. Common preparations with egg.

List of DBT Experiments

- 1 Determination of juiciness of meat.
- 2 Determination of over boiling of eggs and Formation of Hydrogen Sulphide.

Note: Out of 12 - 10 Mandatory



Reference Books	1.	Mohini Sethi, Eram. S. Rao, 2021, "Food Science - Experiments and Applications," CBS Publishers, India.
	2.	Usha Chandrasekhar, 2002, "Food Science and its Applications in Indian Cookery, Phoenix Publishing House PVT. LTD., New Delhi.



Semester - I
IDC 1: CHEMISTRY

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24CEU1IA	CHEMISTRY	IDC	36	-	-	3

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none">• The concept of expressing concentration of solutions• The concepts of chemical kinetics and catalysis• About the bonding and basic organic chemistry	
Prerequisite	Knowledge on Basic Chemistry	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the concept of concentration of the solutions	K2
CO2	Infer the acid and basic properties of solutions	K2
CO3	Interpret the concept of the bonding in molecules	K2
CO4	Summarize the basic concepts of the stereo chemistry	K2
CO5	Explain the Chemical kinetics and catalysis	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	Solutions Normality, molarity, molality, mole fraction, mole concept. Primary and secondary standards – Preparation of standard solutions. Principle of Volumetric analysis (with simple problems) Indicators – Theory of indicators - Ostwald and quinonoid theory	07	Text Book
II	Acids and Bases Acid base theories – Strength of acids and bases – Equilibrium constant and ionic constant of water- pH, pKa, pKb, Buffer solution, pH and pOH simple calculations	07	Reference Book
III	Chemical Bonding Types of bonding - Ionic Bond: Nature of ionic bond, factors influencing the formation of ionic bond, Covalent and coordinate bond - Molecular Orbital Theory (MO) – MO configuration of H ₂ , N ₂ , O ₂ - Bond order – diamagnetism and paramagnetism	08	Text Book
IV	Stereo Chemistry Isomerism, Structural isomerism - Symmetry of elements (Plane, Centre and Axis of symmetry), Optical isomerism of lactic acid and tartaric acid, Enantiomers, Diastereomers – Separation of racemic mixture, Geometrical isomerism (maleic and fumaric acid). R/S and E/Z configuration assignments for simple molecules	07	NPTEL
V	Chemical Kinetics and Catalysis Rate of reaction, rate law, order, molecularity, first order rate law, half-life period of first order equation, pseudo first order reaction, zero and second order reactions. Catalysis – homogenous, heterogeneous and enzyme catalysis, Industrial applications of enzyme catalysis	07	You Tube Videos
	Total	36	



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.	Lee. J.D, 2002, "A New Concise Inorganic Chemistry", 5 th edition, ELBS & UK.
	2.	Jain. M.K and Sharma. S.C, 2012, "Modern Organic Chemistry", Vishal publishing Co & New Delhi.
	3.	Puri. B.R, Sharma. L.R and Kalia. K.C, 2016, "Principles of Inorganic Chemistry", Vishal Publishing & Co & New Delhi
	4.	Glasstone. S and Lewis. D, 2014, "Elements of Physical Chemistry", 2 nd Edition, Macmillan Ltd, London.

Journal and Magazines	https://onlinelibrary.wiley.com/journal/10974601
E-Resources and Website	https://www.uou.ac.in/lecturenotes/science/MSCH-17/CHEMISTRY%20LN%201%20STERIOCHEMISTRY.pdf

Learning Method	Chalk and Talk/Assignment/Seminar
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Focus of the Course	Skill Development/Employability
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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	



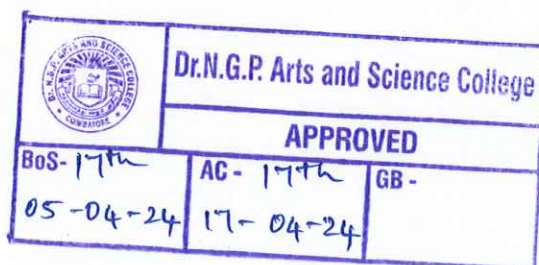
Text Book	1.	Carson, R. 2002. Silent Spring . Houghton Mifflin Harcourt
	2.	Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India . Univ. of California Press.
Reference Books	1.	Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment , London, Routledge.
	2.	Gleick,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

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
Focus of the Course	Skill Development/Employability/Social Awareness and Environment

D. Mh.

BoS Chairman/HoD
Department of Food Science & Nutrition
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048



Semester – II							
LANGUAGE - I: TAMIL - II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2TA	TAMIL - II	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	✓			✓	✓



24TLU2TA	TAMIL - II
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Syllabus

Unit	Content	Hrs	Resources
1	அற இலக்கியம் 1. இலக்கிய வரலாறு- பதினெண்கீழ்க்கணக்குநூல்கள் 2.திருக்குறள் அ. அறன்வலியுறுத்தல் - அறத்துப்பால் - அ. எண் - 04 ஆ. காலம் அறிதல் - பொருட்பால் - அ. எண் - 49 இ. உழவு - பொருட்பால் - அ. எண் - 104 ஈ. குறிப்பறிதல் - காமத்துப்பால் - அ. எண் - 110	13	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
2	அற இலக்கியம் 1. நாலடியார் - அறிவுடைமை 2. மூதுரை - ஓளவையார் - 10 பாடல்கள் 6, 7, 9, 10, 14, 16, 17, 23, 26, 30 3. இனியவைநாற்பது- பூதஞ்சேந்தனார் - முதல் 10 பாடல்கள்	13	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
3	அறநெறிக் கட்டுரைகள் 1. இலக்கியவரலாறு - தமிழ் உரைநடையின் தோற்றமும் வளர்ச்சியும் 2. கலைகள் - உ.வே.சா 3. சங்க நெறிகள் - வ.சுப.மாணிக்கம்	10	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
4	அறநெறிக் கட்டுரைகள் 1. வீர வணக்கம் - க. கைலாசபதி 2. தமிழர் பண்பாடு - டாக்டர் சோ.நா.கந்தசாமி 3. இணையத் தமிழ் வளர்ச்சி - முனைவர் ப.அர.நக்கீரன்	14	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
5	பயிற்சிப் பகுதி 1.இலக்கணம் - வழு, வழுவமைதி, வழாநிலை 2.அலுவலகம் சார்ந்த கடிதம் - விண்ணப்பங்கள், வேண்டுகோள், முறையீடு 3.படைப்பாக்கம் - பொதுத்தலைப்பில் கட்டுரைகள் எழுதுதல்	10	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
	Total	60	



Text book	1.	தமிழ் மொழிப்பாடம் – 2024-2025 தொகுப்பு: தமிழ்த்துறை, டாக்டர் என்.ஜி.பி. கலை அறிவியல் கல்லூரி, 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 – II							
LANGUAGE - I: HINDI – II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2HA	HINDI – II	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	आधुनिकपद्य - शबरी(श्रीनरेशमेहता)	13	Text Book
2	उपन्यास: सेवासदन-प्रेमचन्द	13	Text Book
3	कहानी-किरीट- डा उषा पाठक / डा अचला पाण्डेय पाठ 1.कफ़न, 3. चीफ़ की दावत	12	Text Book
4	पत्र लेखन: (औपचारिक या अनौपचारिक)	12	Text Book
5	अनुवाद अभ्यास-III (केवल हिन्दी से अंग्रेजी में) (पाठ 1 to 10)	10	Text Book
	Total	60	

Text books	1.	प्रकाशक: लोकभारती प्रकाशन पहली मंजिल, दरबारी बिल्डिंग, महात्मा गाँधी मार्ग, इलाहाबाद. (Unit I)
	2.	प्रकाशक: सुमित्र प्रकाशन 204 लीला अपार्टमेंट्स, 15 हेस्टिंग्स रोड अशोक नगर इलाहाबाद. (Unit II)
	3.	प्रकाशक: राधाकृष्ण प्रकाशन दिल्ली. (Unit III)
	4.	पुस्तक: व्याकरण प्रदिप - रामदेवप्रकाशक: हिन्दी भवन 36 इलाहाबाद. (Unit IV)
	5.	प्रकाशक: दक्षिण भारत प्रचार सभा चेन्नई. (Unit V)

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – II							
LANGUAGE - I: MALAYALAM- II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2MA	MALAYALAM- II	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	✓			✓	✓



24TLU2MA	MALAYALAM- II
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Syllabus

Unit	Content	Hrs	Resources
1	Novel Enmakaje: Chapter1- Chapter 5	14	Text book
2	Novel Enmakaje: Chapter 6- Chapter 10	10	Text book
3	Novel Enmakaje: Chapter 11- Chapter 15	14	Text book
4	Autobiography Neermathalam Pootha Kalam: Chapter 1- Chapter 10	10	Text book
5	Autobiography Neermathalam Pootha Kalam: Chapter 11- Chapter 20	12	Text book
	Total	60	

Text books	1.	Ambika Suthan Mangad, Enmakaje (Novel), DC Books Kottayam, Kerala, India. (Unit I to III)
	2.	Madhavikkutty, Neermathalam Pootha Kalam (Autobiography), DC Books Kottayam, Kerala, India. (Unit IV & V)
Reference Books	1.	Malayala Novel Sahithyam, DC Books Kottayam, Kerala, India
	2.	Malayala Sahithya Charithram, National Books Kottayam, Kerala, India.

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – II							
LANGUAGE – I: FRENCH - II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2FA	FRENCH - II	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	✓			✓	✓



24TLU2FA FRENCH - II

Syllabus

Unit	Content			Hrs	Resources
1	Proposer, accepter, refuser une invitation. Indiquer la date.	Organiser une soirée au cinéma avec des amis, par téléphone et par courriel.	Comprendre un message d'invitations sur un répondeur téléphonique. Inviter quelqu'un à accepter ou à refuser l'invitation.	14	Text book
2	Prendre et fixer un rendez-vous. Demander et indiquer l'heure.	Organiser une soirée au cinéma avec des amis, par téléphone et par courriel.	Comprendre des personnes qui fixent un rendez-vous par téléphonique. Prendre un rendez-vous par téléphone	12	Text book
3	Exprimer son point de vue positif et négatif. S'informer sur le prix. S'informer sur la quantité. Exprimer la quantité.	En groupes, choisir un cadeau pour un ami.	Exprimer son point de vue sur des idées de cadeau. Faire des achats dans un magasin	14	Text book
4	Demander et indiquer une direction. Localiser (près de, en face de). Exprimer l'obligation / l'interdit. Conseiller.	Suivre un itinéraire à l'aide d'indications par téléphone et d'un plan. Par courrier électronique, donner des informations et des conseils à un ami qui veut voyager.	Comprendre des indications de direction. Comprendre des indications de lieu. Comprendre une chanson. Comprendre de courts messages qui expriment l'obligation ou l'interdiction. Donner des conseils à des personnes dans des situations données.	10	Text book
5	Practical Application Make in Own Sentences			10	-
	Total			60	

Text book	1.	Regine Merieux, Yves Loiseau, "LATITUDES - 1" (Page No: 56-101) (Méthode de Français), Goyal Publisher & Distributors Pvt.Ltd., 86 UB Jawahar Nagar (Kamala Nagar), New Delhi-7 Les Editions Dider, Paris, 2008- Imprime en Roumanie par Canale en Janvier 2012. (Unit I to IV
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Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – II LANGUAGE:ENGLISH - II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24ELU2EA	ENGLISH – II	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"> • language for specific purposes through literary works, enhancing listening and reading skills. • communicative competencies in academics through real-world contexts, improving speaking and listening. • business correspondence with clarity and accuracy, focusing on writing skills like emails and essays.
Prerequisite	Basic knowledge of English Language

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Interpret spoken English through active listening and respond effectively.	K1
CO2	Express effective speaking skills through structured and informal discussions.	K2
CO3	Analyse and comprehend literary and informational texts to enhance reading proficiency.	K2
CO4	Compose written content with clarity and coherence in various contexts.	K3
CO5	Apply essential soft skills for professional interactions, leadership, and communication.	K3

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



24ELU2EA LANGUAGE: ENGLISH - II

Syllabus

Unit	Content	Hrs	Resources
I	Listening Poem: Edgar A. Guest – Don't Quit Repetition for emphasis - Tone and Emotional appeal Langston Hughes – Still Here Voice & Identity - Resilience & Endurance. Short Story: R.K. Narayan – Engine Trouble Emotional tone – Question for Reflection Listening Talks: "Yes, We Can!" - Barack Obama (speech) – (Audio & Visual aids) Grammar: Articles & Prepositions	12	https://poetryace.com/im-still-here/
II	Speaking Poem: Robert Frost –The Road not Taken Persuading and supporting opinions – logical structure – clear articulation D. H Lawrence – Snake Observation and Patience - Respect and Humility Speaking Skills: Just a Minute Talk (JAM) – Small Talk, Interviewing a Celebrity. Grammar: One word substitution, Loan Words.	12	www.poetrysoup.com
III	Reading Poem: Chinua Achebe – Love Cycle Inferring and Interpreting - Synthesis of Ideas Connection and Understanding - Adaptability and Growth Short story: Sudha Murthy – How I taught My Grandmother to Read Building comprehension – Fluency & Expression Grammar: Syllabification, Mon/Di/polysyllabic Comparison - Odd one Out - Rearranging the sentences (Jumbled sentences).	12	https://www.poetryfoundation.org/poems
IV	Writing Prose: A. G. Gardiner: On Letter Writing Clarity and Precision – Self expression Writing Skills: Story Building, Story Writing & Story Narration Emails (formal/informal) & General Essay Writing - (Descriptive or Narrative) Grammar: Spelling Pitfalls (wrongly spelt words), Agreement of verb and subject	12	https://www.gutenberg.org/
V	Soft Skills Expressing opinions through Role play– Interview Skills - Public Speaking - Group Discussions - Leadership Qualities - Communication on Verbal and Non-verbal	12	Social intelligence: The new science of human relationships -



			Daniel Goleman; 2006.
	Total	60	

Note: Classroom activities on LSRW skills (Examined Internal only)

Text Books	1.	Martin Hewings. <i>Advanced English Grammar</i> . Cambridge University Press, 2000.
	2.	SP Bakshi, Richa Sharma. <i>Descriptive English</i> . Arihant Publications (India) Ltd., 2019.
	3.	Sheena Cameron, Louise Dempsey. <i>The Reading Book: A Complete Guide to Teaching Reading</i> . S & L. Publishing, 2019.
	4.	Phil Chambers. <i>Brilliant Speed Reading: Whatever you need to read, however</i> . Pearson, 2013.
	5.	Bailey, Stephen. <i>Academic Writing: A Practical Guide for Students</i> . Routledge, 2004.
	6.	Goleman, Daniel. <i>Social Intelligence: The New Science of Human Relationships</i> . Bantam Books, 2006.
Reference Books	1.	Nesfield, J. C. <i>English Grammar Composition and Usage</i> . Macmillan, 2019.
	2.	Krishnasamy. N. <i>Modern English: A Book of Grammar, Usage and Composition</i> . Macmillan, 1975.
	3.	Kumar, Ramendra. <i>Stories of Resilience</i> . Blue Rose Publications, 2020.
	4.	Thakur, SJ and Rout, S.K. <i>Objective General English</i> . B.K Publications, 2017.

Journals and Magazines	IOSR Journal of Humanities and Social Science (IOSR-JHSS) International Journal of English Literature and Social Sciences http://ijrep.com/wp-content/uploads/2019/03/18-22-SKILL-ENHANCEMENT-TEACHING-LSRW https://www.jetir.org/view?paper=JETIRDY06148
E-Resources and Website	https://learnenglish.britishcouncil.org/ https://www.yourarticlelibrary.com/

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion
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Focus of the Course	Skill Development/ Employability
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Semester – II							
CORE: PRINCIPLES OF NUTRITION							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24FNU2CA	PRINCIPLES OF NUTRITION	CORE	48	12	12	4

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none">the vital link between nutrition and healththe functions, metabolism of macro and micro nutrientsthe effects of deficiency and toxicity of macro and micro nutrients	
Prerequisite	Basics Principles of Nutrition	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the introduction and basic values to determine energy	K2
CO2	Illustrate the role of carbohydrate, dietary fiber and the significance of fats in human nutrition	K3
CO3	Construct the supplementation of dietary proteins in human nutrition and vital role of amino acids and mutual	K3
CO4	Speculate the role of vitamins and its implication in human nutrition	K3
CO5	Infer the general functions of minerals along with its role and implication in human nutrition	K3

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



Syllabus

Unit	Content	Hrs	Resources
I	Energy History of nutrition, Nutrition research in India Definition of Energy and its unit (Calorie and Joule). Energy Metabolism- Direct and Indirect calorimetry, Determination of energy value of food- Bomb calorimeter, Thermic effect of food- definition and factors affecting, Physiological fuel value of food. Basal Metabolic rate- Definition, measurement- direct and indirect method and determinants of BMR. Recommended Dietary Allowances for energy.	15	Text Book
II	Carbohydrate, Fat and Lipid Carbohydrates - Classification, functions, digestion, absorption, metabolism, utilization, deficiency, sources and requirements. Dietary fiber – Definition, Types and sources, Role of fiber in human health. Fats and Lipids - Classification, functions, digestion, absorption, metabolism, sources and requirements, types and sources of fatty acids.	14	Text Book
III	Protein and Amino acids Proteins - Classification, functions, digestion, absorption, metabolism, utilization, deficiency, sources and requirements. Evaluation of protein quality-PER, BV and NPU, Digestibility Coefficient, Reference protein. Amino acids - Essential amino acids and non-Essential amino acids.	14	Text Book
IV	Vitamins Vitamins – Classification and functions of vitamins in the body. Fat soluble vitamins - Functions, absorption, metabolism, sources, requirements, deficiency and toxicity of Vitamin A, D, E and K. Water Soluble Vitamins - Functions, sources, absorption, metabolism, requirements, deficiency and toxicity of B Complex Vitamins (Thiamine, Riboflavin, Niacin, Pyridoxine, Folic Acid, Pantothenic acid) and Vitamin C. Amygdalin (Vitamin B17)- Sources and significance.	14	Text Book



V	Minerals and Water Minerals – Classification and Functions Micro minerals (Iron and Iodine – absorption and metabolism, Zinc, Copper, Fluorine) -Functions, sources, requirements, deficiency and toxicity. Macro minerals (Calcium, Phosphorus and Magnesium)-Functions, absorption, metabolism, sources, requirements, deficiency and toxicity. Water – Distribution, functions, requirements and sources of water, water depletion and intoxication, maintenance of water and electrolyte balance. Electrolytes (Sodium, Potassium and Chloride)-Functions and sources.	15	Text Book
	Total	72	

Text Book	1.	Srilakshmi B., 2021, “Nutrition Science”, 7 th Edition, New Age International Publishers, New Delhi.
	2.	Shubhangini A Joshi, 2021, “Nutrition and Dietetics”, 5 th Edition, Mc Graw Hill Publishing Company Ltd, New York.
	3.	Bamji M S., 2019, “Textbook of Human Nutrition”, 4 th Edition, Oxford and IBH Publishing Company, United Kingdom
	4.	Gajalakshmi R, 2015, “Nutrition Science”, 1 st Edition, CBS publishers and Distributors, New Delhi.
Reference Books	1.	Swami Nathan M., 2014, “Handbook of Food and Nutrition”, 1 st Edition, Bappco Printing Publishing Company, Mysore.
	2.	Eva D. Wilson., " Principles of Nutrition", John Wiley and Sons Inc; 3 rd Edition

Journal and Magazines	https://www.sciencedirect.com/science/article/abs/pii/S1357303918303190
E-Resources and Website	https://www.cambridge.org/core/books/abs/nutritional-psychiatry/basic-principles-of-nutrition/8CDCDC38AA1DCC3544D3300C3AEC4C48

Learning Method	Chalk and Talk/ Assignment/Seminar/ Interactive session
Focus of the Course	Skill Development/ Employability



Semester – II							
CORE PRACTICAL: QUALITATIVE NUTRIENT ANALYSIS							
Semester	Corse Code	Course Name	Category	L	T	P	Credits
II	24FNU2CP	QUALITATIVE NUTRIENT ANALYSIS	CORE		-	60	2

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> • the basic principles for analysis the nutrients • the quality control and assurance • the application analytical techniques
Prerequisite	Knowledge on basic analysis of nutrients

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Demonstrate a clear understanding of the principles of quantitative analysis techniques	K2
CO2	Calibrate laboratory instruments and use them proficiently for precise and accurate measurements in nutrient analysis	K2
CO3	Implement appropriate quality control measures, to ensure the reliability and reproducibility of results	K2
CO4	Accurately apply various laboratory methods for the quantitative determination of essential nutrients	K2
CO5	Analyze the results from nutrient analysis and interpret data in the context of food composition and nutritional quality	K3

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



24FNU2CP	CORE PRACTICAL: QUALITATIVE NUTRIENT ANALYSIS
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Syllabus

S.No	Contents
1	Determination of moisture content and mode of operation technique of Hot air oven and microwave oven.
2	Determination of gluten content in wheat
3	Gelatinization & microscopic examination of starches.
4	Estimation of pH in fruit juices.
5	Estimation of Titrable Acidity
6	Determination of Ash content in food.
7	Estimation of Iron and Phosphorous content in food
8	Estimation of Ascorbic Acid in citrus fruits.
9	Qualitative test for Vitamin A
10	Determination of Smoking Point of Fat.
11	Determination of Oil Absorption Capacity of Baked Foods
12	Demonstration on Estimation of Fiber

Experiments Under DBT

- 1 Effect of pH and water on plant pigments
- 2 Estimation of rancidity and saponification value in oil

Manuals	1. Theodoros Varzakas., 2021, Qualitative Analysis of Food Products, Mdpi AG Publisher.
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Learning Method	Demonstration/ Hands on Experiments/ Group Trials
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester – II IDC: APPLIED CHEMISTRY							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24CEU2IM	APPLIED CHEMISTRY	IDC	36	-	48	5

Preamble	<p>These objectives aim to provide students with theoretical knowledge and practical skills, enabling them to analyze and understand the chemical processes that shape our food and how to manage them sustainably and safely.</p> <ul style="list-style-type: none"> • Perform simple food tests to detect the presence of nutrients like starch, protein, fat, and sugars to gain hands-on experience in food analysis. • Conduct preservation experiments, such as pickling and fermentation, to observe chemical changes that prevent food spoilage and learn how additives affect the chemical properties of food. • Examine the role of packaging materials in food safety, including using plastics, biodegradable materials, and food-grade chemicals.
Prerequisite	Knowledge on higher secondary chemistry

Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Explain how water acts as a universal solvent and its importance in cooking, hydration, and preservation.	K2
CO2	Conduct simple tests to identify nutrients like starch, protein, fat, and sugar in food samples.	K2
CO3	Understand the chemical principles behind fermentation and its in food production.	K3
CO4	Describe how chemicals influence food's taste, aroma, and overall sensory properties.	K2
CO5	Observe and analyze the decomposition of organic and plastic materials, relating to sustainability.	K2

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



24CEU2IM - APPLIED CHEMISTRY

Syllabus

Unit	Content	Hours	E-Contents / Resources
I	Water Chemistry in Food Water as a Universal Solvent - Role in cooking, hydration, and food preservation. Solubility - Factors affecting solubility (temperature, type of solute). Acid-Base Reactions in Cooking - Neutralization - examples from everyday cooking. 1. Solubility Experiment: Test salt and sugar's solubility in cold and hot water. 2. Boiling Point Elevation: Add salt to boiling water and observe the change in boiling point. 3. Neutralization: Mix vinegar (acid) and baking soda (base) to observe the neutralization reaction.	17 h	Text Book
II	Nutrients and Their Chemical Properties Carbohydrates - Types, simple vs. complex carbohydrates, and their sources. Proteins - Role of amino acids, sources of protein, and protein structures. Fats and Oils: Differences between saturated and unsaturated fats - Role in the body. Vitamins and Minerals - Chemical properties and importance. 4. Testing for Nutrients: Simple food tests: a. Starch Test: Iodine solution to detect starch in potatoes or bread. b. Protein Test: Biuret solution to check for proteins in milk or egg whites. c. Fat Test: Paper test to see the presence of fat in butter or oil. d. Sugar Test: Benedict's solution to test for simple sugars in fruit juice	17 h	Reference Book
III	Food Preservation and Safety Role of Preservatives - Chemical preservatives - salt, sugar, and vinegar - and their effect on microbes. Fermentation - Chemical process - Importance in food - Yogurt and bread. Food Contamination - Safe handling of food chemicals - understanding food labels 5. Pickling: Preserve vegetables using salt and vinegar and observe how it prevent spoilage.	17 h	Text Book



	6. Fermentation Experiment: Make simple bread dough with yeast and observe gas production. 7. pH Testing: Use pH paper to measure the pH of various food items (vinegar, milk, lemon juice).		
IV	Food Additives and Their Chemical Nature Types of Food Additives: Natural vs. synthetic - examples of preservatives, colorants, and flavor enhancers. Chemistry of Flavors - Influence of chemicals on taste and aroma. Antioxidants - Role in food preservation and health. 8. Color in Foods: Use natural dyes from beetroot or turmeric and observe color changes in different pH. 9. Flavor Extraction: Make a simple vanilla extract using vanilla beans and alcohol. 10. Preservation Experiment: Compare the preservation of fruit with and without chemical preservatives (citric acid).	17 h	NPTEL
V	Environmental Chemistry in Food Science Impact of Agricultural Chemicals - Fertilizers, pesticides, and their chemical nature. Sustainable Food Chemistry - Organic vs. conventional farming, chemical environmental impact. Packaging and Chemical Safety - Plastics, biodegradable options, food-grade chemicals. 11. Biodegradable Experiment: Observe the decomposition of organic vs. plastic materials over time. 12. Label Reading: Study food labels for preservatives and additives and discuss their chemical safety.	16 h	You Tube Videos
	TOTAL	84 h	

Text Book	1.	B. Srilakshmi, 2024, "Textbook of Food Science and Technology" 8 th Ed., New Age International (P) Ltd.
	2.	M. Swaminathan, 2012, "Essentials of Food and Nutrition – Vol. I & II", 2 nd Ed., The Bangalore Printing and Publishing Co. Ltd
Reference Books	1.	N. Shakuntala Manay & M. Shadaksharaswamy, 2008, "Food Facts and Principles", 3 rd Ed., New Age International (P) Limited, New Delhi.
	2.	W.B. Arsdell, M.J. Copley, A.I. Morgan, 1973, "Food Dehydration", 2 nd Ed. Vols. I, II. AVI Publ.



3.	D D Mishra & S S Dara, 1993, "A Textbook of Environmental Chemistry and Pollution Control(With Energy, Ecology, Ethics and Society)", Revised Ed., S Chand Publishing
4.	D.K. Salunkhe, H.R. Bolia, N.R. Reddy, 1991, "Storage, Processing and Nutritional Quality of Fruits and Vegetables: Vol. I. Fruits and Vegetables", 2 nd Ed. CRC Press.

Journal and Magazines	https://www.sciencedirect.com/journal/food-chemistry
E-Resources and Website	https://www.coursera.org/courses?query=food%20science
Learning Method	Chalk and Talk/Assignment/Seminar/ Interactive session
Focus of the Course	Skill Development/Employability



Semester – II							
PART - IV: BASIC TAMIL							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2AA	BASIC TAMIL	AECC - II	24	-	-	2

Preamble	பிறமொழி பயிலும் மாணவர்களுக்கு அடிப்படைத் தமிழ் எழுத்துக்களைக் அறியச் செய்தல்
	தமிழ்மொழியில் உள்ள உயிர், மெய், உயிர்மெய் எழுத்துக்களைக் எழுதச் செய்தல்
	தமிழ்மொழியில் உள்ள அடிப்படைச் சொற்களை எழுதி, படிக்கச் செய்தல்
Prerequisite	தமிழ்மொழியினை முறையாக எழுதிப் படிக்கும் திறனை வளர்த்தல்

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	வாழ்க்கைத்திறன்கள் (Life Skills)- மாணவர்களின் செயலாக்கத்திறனை உனக்குவித்தல்	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	✓			✓	✓



24TLU2AA	PART- IV: BASIC TAMIL
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இளங்கலை 2024 -25 ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது
(10 மற்றும் 12 - ஆம் வகுப்பு வரை தமிழ் மொழிப்பாடம்
பயிலாதவர்களுக்கு)
(பருவத் தேர்வு இல்லை)

Syllabus

Unit	Content	Hrs	Resources
1	தமிழ் மொழியின் அடிப்படைக் கூறுகள் எழுத்துகள் அறிமுகம் 1. உயிர் எழுத்துக்கள் - குறில் , நெடில் எழுத்துகள் 2. மெய் எழுத்துக்கள் - வல்லினம், மெல்லினம், இடையினம் 3. உயிர்மெய் எழுத்துக்கள் 4. பயிற்சி	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
2	சொற்களின் அறிமுகம் 1.பெயர்ச்சொல் 2.வினைச்சொல் - விளக்கம் (எ.கா.) 3.பயிற்சி	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
3	குறிப்பு எழுதுதல் 1. பெயர், முகவரி, பாடப்பிரிவு , கல்லூரியின் முகவரி 2. தமிழ் மாதங்கள்(12), வாரநாட்கள்(7) 3. எண்கள் (ஒன்று முதல் பத்து வரை), வடிவங்கள், வண்ணங்கள்	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
4	குறிப்பு எழுதுதல் 1. ஊர்வன, பறப்பன, விலங்குகள் 2.மனிதர்களின் உறவுப்பெயர்கள் 3. ஊர்களின்பெயர்கள் (எண்ணிக்கை 10)	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
5	பயிற்சிப் பகுதி (உரையாடும் இடங்கள்) வகுப்பறை, பேருந்து நிலையம், சந்தை- பேசுதல்,எழுதுதல்.	04	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
	Total	24	



Notes:

அகமதிப்பீட்டுத்தேர்வு - வினாத்தாள் அமைப்புமுறை- மொத்த மதிப்பெண்கள் - 50

பகுதி -அ

சரியான விடையைத் தேர்வு செய்தல் 10x2=20

பகுதி -ஆ

சரியா? தவறா? 10x2=20

பகுதி - இ

ஒரு பக்க அளவில் விடையளிக்க 1x10=10

குறிப்பு:

- அனைத்து அலகுகளில் இருந்தும் வினாக்கள் அமைதல் வேண்டும்
- பகுதி இ-க்கான வினாக்கள் இதுஅல்லது அதுஎன்ற அடிப்படையில் அமைதல் வேண்டும்

Text book	1.	அடிப்படைத் தமிழ் - 2024-2025 தொகுப்பு: தமிழ்த்துறை, டாக்டர்என்.ஜி.பி. கலை அறிவியல் கல்லூரி, கோயம்புத்தூர் - 641048.
Reference Books	1.	ஒன்றாம் வகுப்பு பாடநூல் - தமிழ்நாடு அரசு பாடநூல் கழகம், சென்னை.

E-Resources and Website	https://www.tamilvu.org
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Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – II							
PART- IV: ADVANCED TAMIL							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2AB	ADVANCEDTAMIL	AECC - II	24	-	-	2

Preamble	மொழிப்பாடங்களின் வாயிலாக தமிழரின் பண்பாடு நாகரீகம், பகுத்தறிவு ஆகியவற்றை அறியச் செய்தல்
	கலை மற்றும் மரபுகளை அறியச் செய்தல்
	மாணவர்களின் படைப்பாக்கத்திறன்களை ஊக்குவித்தல்
Prerequisite	தமிழ்மொழியினை முறையாக எழுதிப் படிக்கும் திறனை வளர்த்தல்

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Taxonomy 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	✓			✓	✓



24TLU2AB	PART- IV: ADVANCED TAMIL
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இளங்கலை 2024- 2025ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது
(10 மற்றும் 12 - ஆம் வகுப்புகளில் தமிழ் மொழிப்பாடம்
பயின்றவர்களுக்கு உரியது)
(பருவத் தேர்வு இல்லை)
Syllabus

Unit	Content	Hrs	Resources
1	கவிதைகள் 1. தமிழ்நாடு - பாரதியார் 2. மனதில் உறுதி வேண்டும் - பாரதியார் 3. இன்பத்தமிழ் - பாரதிதாசன் 4. வேலைகளல்லவேள்விகள் - தாராபாரதி 5. தமிழா! நீ பேசுவது தமிழா! - காசியானந்தன் 6. நட்புக் காலம் (10 கவிதைகள்) - அறிவுமதி கவிதைகள்	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
2	கட்டுரை கட்டுரைத் தொகுப்பு - நல்வாழ்வு - டாக்டர் மு.வரதராசன் 1. நம்பிக்கை 2. புலனடக்கம் 3. பண்பாடு	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
3	இலக்கணம் 1. வல்லினம் மிகும் மற்றும் மிகா இடங்கள் 2. ர, ற, ல, ழ, ள, ந, ண, ன - வேறுபாடு அறிதல்	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
4	கடிதங்கள் 1. பாராட்டுக் கடிதம் 2. நன்றிக் கடிதம் 3. அழைப்புக் கடிதம் 4. அலுவலக விண்ணப்பங்கள்	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
5	பயிற்சிப் பகுதி படைப்பாக்கப் பகுதி: பொதுத் தலைப்புகளில் கவிதை, கட்டுரை எழுதச்செய்தல்	04	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
Total		24	



Notes

அக மதிப்பீட்டுத் தேர்வு - வினாத்தாள் அமைப்பு முறை- மொத்த மதிப்பெண்கள் - 50

பகுதி -அ

சரியான விடையைத் தேர்வு செய்தல்

10x1=10

பகுதி -ஆ

கோடிட்ட இடங்களை நிரப்புக.

10x2=20

பகுதி -இ

இரண்டு பக்க அளவில் விடையளிக்க

2x10=20

குறிப்பு:

- அனைத்து அலகுகளில் இருந்தும் வினாக்கள் அமைதல் வேண்டும்
- பகுதி இ-க்கான வினாக்கள் இதுஅல்லது அதுஎன்ற அடிப்படையில் அமைதல் வேண்டும்

Text book	1.	சிறப்புத் தமிழ் - 2024-2025 தொகுப்பு: தமிழ்த்துறை, டாக்டர்என்.ஜி.பி. கலை அறிவியல் கல்லூரி, கோயம்புத்தூர் - 641048.
Reference Books	1.	பேராசிரியர் புலவர் சோம. இளவரசு,எட்டாம் பதிப்பு. 2014. தமிழ் இலக்கிய வரலாறு - மணிவாசகர் பதிப்பகம்,சென்னை.
	2.	டாக்டர் மு.வரதராசன். 2010. நல்வாழ்வு, பாரி நிலையம், சென்னை.
	3.	பேராசிரியர் முனைவர் பாக்கியமேரி,முதற் பதிப்பு.2013. இலக்கணம் - இலக்கிய வரலாறு - மொழித்திறன்- பூவேந்தன் பதிப்பகம், சென்னை.

E-Resources and Website	https://www.tamilvu.org
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Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
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Focus of the Course	Skill Development / Employability
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Semester – II							
AECC-II: HUMAN RIGHTS AND WOMEN'S RIGHTS							
Semester	Corse Code	Course Name	Category	L	T	P	Credits
II	24CRU2AA	HUMAN RIGHTS AND WOMEN'S RIGHTS	AECC	24	-	-	2

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> • Concepts of Human Rights • Human Rights Violation and Redressal Mechanism. • Rights to Women and Child.
Prerequisite	Knowledge on Human and Women's Rights.

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the basic concepts of Human Rights.	K2
CO2	Describe the Fundamental Rights.	K2
CO3	Relate Human Rights Violation and Redressal Mechanism.	K3
CO4	Infer the Rights of Women and Child.	K2
CO5	Apply Civil and Political Rights of Women.	K3

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



24CRU2AA	AECC: HUMAN RIGHTS AND WOMEN'S RIGHTS
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to Human Rights Meaning - Definition - Nature - Content - Legitimacy of Human Rights - Origin and Development of Human Rights - Theories - Principles of Magna Carta - Modern Movements of Human Rights - The Future of Human Rights.	4	Text Book
II	Human Rights in India The Constitution of India: Fundamental Rights - Right to Life and Liberty - Directive Principles of State Policy - Fundamental Duties - Individual and Group Rights - Other facets of Human Rights - Measures for Protection of Human Rights in India.	5	Text Book
III	Human Rights Violation and Redressal Mechanism Human Rights: Infringement of Human Right by State Machinery and by Individual - Remedies for State action and inaction - Constitutional Remedies - Public Interest Litigation (PIL) - Protection of Human Rights Act, 1993 - National Human Rights Commission - State Human Rights Commissions - Constitution of Human Right Courts. Case study: Human rights violation.	5	Text Book
IV	Rights of Women and Child Matrimonial protection - Protection against dowry - Protection to pregnancy - Sexual offences - Law relating to work Place - Directive principles of Constitution (Article 39 a, d, e & Article 42, 43 & 46) - Trafficking of women - Constitutional Rights - Personal Laws - Protection of children against Sexual Offences Act, 2012 (POCSO). Case study: Sexual offences.	5	Text Book
V	Civil and Political Rights of Women Right of Inheritance - Right to live with decency and dignity - The Married Women's Property Act, 1874 - Women's right to property - Women Reservation Bill - National Commission for Women - Political participation - Pre-independent political participation of women - Participation of Women in post independent period. Kavalan App and Police Akka App. Case study: Women's right to property	5	Text Book
Total		24	

Note: Case studies related to the above topics to be discussed (Examined Internal only)

Text book	1.	Lalit Parmar, 1998, "Human Rights", Anmol Publications Pvt. Limited, New Delhi..
	2.	Krishna Pal Malik, 2009, "Women & Law ", Allahabad Law University, New Delhi.
Reference	1.	Mandagadde Rama Jois, 2015, "Human Rights", Bharatiya Values, Bharatiya





Books		Vidya Bhavan Publications, Mumbai.
	2.	Paras Diwan and Piyush Diwan, 1994, "Women and Legal Protection", South Asia Books, Andhra Pradesh.
	3.	Venkataram and Sandhiya. N, 2001, "Research in Value Education", APH Publishing Corporation, New Delhi.
	4.	Anand A. S, 2008, "Justice for Women: Concerns and Expressions", Universal Law Publishing Co., New Delhi..

Journal and Magazines	Women and International Human Rights in Modern Times, Human Rights Law Review, Volume 24, Issue 2, June 2024. https://doi.org/10.1093/hrlr/ngae007
E-Resources and Website	Women's Rights as Human Rights, https://www.ohchr.org/sites/default/files/Documents/Events/WHRD/WomenRightsAreHR.pdf

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Social Awareness/ Environment / Gender Sensitization / Constitutional Rights/ Human Values/ Ethics
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 BoS Chairman/HoD
 Department of Food Science & Nutrition
 Dr. N. G. P. Arts and Science College
 Coimbatore – 641 048

 Dr.N.G.P. Arts and Science Col		
APPROVED		
BoS- 18 th 8/11/24	AC- 18 th 26/11/24	GB -



Dr.NGPASC
 COIMBATORE | INDIA

B.Sc. Food Science and Nutrition (Students admitted during the AY 2024-25)