

## **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. Clinical Laboratory Technology**

##### **Eligibility:**

A pass in Higher Secondary Examination with Physics / Botany/ Chemistry / Zoology / Biology/ Nursing/ Microbiology/ Bio Chemistry/ Home Science or Diploma in Pharmacy / DMLT / Pharmacology as one of the subjects 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 (Clinical Laboratory Technology) 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. Attain careers as practicing laboratory technicians in fields such as clinical laboratories, hospitals, clinical research centers, biotechnology laboratories, equipment manufacturing industries.
2. Attain advanced studies in disciplines such as Microbiology, Medical Laboratory Technology, Biochemistry, Biotechnology, Hospital Administration, Hospital Records Management, etc.
3. Attain professional leadership roles and entrepreneurial skills.





### PROGRAMME OUTCOMES:

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

PO Number	PO Statement
PO1	The students are familiarized with theoretical and practical aspects of life science education.
PO2	Students are encouraged to recognize and appreciate life processes taking place in human body.
PO3	Students are exposed to modern tools and techniques adopted in the medical field and are motivated to apply the contextual knowledge for analysis and interpretation of data.
PO4	Students are kindled to realize the need for lifelong learning and need for sustainable development.
PO5	Students are encouraged to understand and follow ethical principles and practices and function effectively as an individual or team thereby achieve employability/entrepreneurship skills.





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

Part	Subjects	No. of Papers	Credit	Semester No.
<b>I</b> (12 Credits)	Tamil / Hindi / French/Malayalam	4	4 x 3 = 12	I & IV
<b>II</b> (12 Credits)	English	4	4 x 3 = 12	I & IV
<b>III</b> (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
<b>IV</b> (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
<b>V</b> (2 Credits)	NSS/NCC/YRC/RRC/Yoga/ Sports/Clubs	-	2	I -II
<b>TOTAL CREDITS</b>			<b>142</b>	





**CURRICULUM**  
**B.Sc. Clinical Laboratory Technology**  
**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				5	60					
24TLU1MA		Malayalam-I				5	60					
24TLU1FA		French - I				5	60					
Part - II												
24ELU1EA	Language - II	English-I	4	-	1	5	60	3	25	75	100	3
Part - III												
24CLU1CA	Core-I	Human Anatomy and Physiology	4	1	-	5	60	3	25	75	100	4
24CLU1CB	Core-II	General Biochemistry	4	-	-	4	48	3	25	75	100	4
24CLU1CP	Core Practical - I	Biochemistry	-	-	6	6	72	6	40	60	100	3
24ITU1IA	IDC-I	Basics of Information Technology	3	-	-	3	36	3	25	75	100	3
Part - IV												
24MBU1AA	AECC-I	Environmental Studies	2	-	-	2	24	-	50	-	50	2
Part - V												
24CLU1XA	Extension Activity	NSS/NCC/YRC/RRC/Yoga/Sports/Clubs	-	-	-	-	-	-	50	-	50	1
Total						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	
Second Semester												
Part - I												
24TLU2TA	Language - I	Tamil-II	4	1	-	5	60	3	25	75	100	3
24TLU2HA		Hindi-II				5	60					
24TLU2MA		Malayalam-II				5	60					
24TLU2FA		French - II				5	60					
Part - II												
24ELU2EA	Language - II	English-II	4	-	1	5	60	3	25	75	100	3
Part - III												
24CLU2CA	Core - III	Bioanalytical Techniques	3	-	-	3	36	3	25	75	100	3
24CLU2CB	Core - IV	Intermediary Metabolism and Metabolic Disorders	4	-	-	4	48	3	25	75	100	4
24CLU2CP	Core Practical -II	Clinical Biochemistry-I	-	-	4	4	48	4	40	60	100	2
24ITU2IM	IDC - II	Computer Applications in Clinical Laboratory	3	-	4	7	84	3	40	60	100	5
Part - IV												
24TLU2AA / 24TLU2AB / 24CRU2AA	AECC-II	Basic Tamil/ Advanced Tamil/ Human Rights and Women's Rights	2	-	2	24	-	50	-	50	2	
Part - V												
24CLU2XA	Extension Activity	NSS/NCC/ YRC/RRC/ Yoga/Sports/ Clubs	-	-	-	-	-	50	-	50	1	
Total					30	360				700	23	





Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total			CIA	ESE	
Third Semester												
Part - I												
24TLU3TA	Language - I	Tamil-III	3	1	-	4	48	3	25	75	100	3
24TLU3HA		Hindi-III				4	48					
24TLU3MA		Malayalam-III				4	48					
24TLU3FA		French - III				4	48					
Part - II												
24ELU3EA	Language - II	English- III	3	1	-	4	48	3	25	75	100	3
Part - III												
24CLU3CA	Core- V	Clinical Pathology	4	1	-	5	60	3	25	75	100	5
24CLU3CB	Core- VI	Histopathology	4	1	-	5	60	3	25	75	100	5
24CLU3CP	Core Practical- III	Pathology	-	-	6	6	72	6	25	75	100	3
24FNU3IA	IDC - III	Clinical Nutrition	3	-	-	3	36	3	25	75	100	3
24CLU3SA	SEC-I	Laboratory Automation and Quality Control	3	-	-	3	36	3	25	75	100	2
Total						30	360				700	24





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				4	48					
24TLU4MA		Malayalam-IV				4	48					
24TLU4FA		French - IV				4	48					
Part - II												
24ELU4EA	Language - II	English -IV	3	1	-	4	48	3	25	75	100	3
Part - III												
24CLU4CA	Core- VII	Molecular Biology	3	-	-	3	36	3	25	75	100	3
24CLU4CB	Core- VIII	Clinical Biochemistry- Functional Tests	4	-	-	4	48	3	25	75	100	4
24CLU4CP	Core Practical - IV	Clinical Biochemistry- II	-	-	4	4	48	4	40	60	100	2
24MBU4IA	IDC - IV	General Microbiology	3	-	-	3	36	3	25	75	100	3
24MBU4IP	IDC Practical	Microbiology	-	-	5	5	60	9	40	60	100	2
24CLU4SA	SEC - II	Blood Banking and Blood Transfusion	3	-	-	3	36	3	25	75	100	2
Total						30	360				800	22





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												
24CLU5CA	Core- IX	Immunology	5	-	-	5	60	3	25	75	100	5
24CLU5CB	Core - X	Hematology	4	-	-	4	48	3	25	75	100	4
24CLU5CP	Core Practical- V	Hematological Techniques	-	-	6	6	72	6	40	60	100	3
24CLU5CQ	Core Practical -	Molecular and Immunotechniques	-	-	6	6	72	6	40	60	100	3
24CLU5SA	SEC -III	Research Methodology and Biostatistics	3	-	-	3	36	3	25	75	100	2
24CLU5DA	DSE-I	Organisation of Clinical Laboratory and Lab Management	4	-	-	4	48	3	25	75	100	4
24CLU5DB		Human Genetics and Foetal Medicine				4	48					
24CLU5DC		Clinical Enzymology				4	48					
24CLU5TA	IT	Industrial Training	-	-	-	-	-	-	50	50	100	2
Part - I												
24CLU5GA	GE	Concepts of Health	2	-	-	2	24	-	50	-	50	2
Total						30	360				750	25





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													
24CLU6CA	Core-XI	Cytology	5	-	-	5	60	3	25	75	100	5	
24CLU6CB	Core-XII	Diagnostic Molecular Techniques	5	-	-	5	60	3	25	75	100	5	
24CLU6CV	Core - XIII	Project and Viva Voce	-	-	6	6	72	6	40	60	100	3	
24CLU6SP	SEC Practical	Cytological and Molecular Diagnostics	4	-	-	4	48	3	40	60	100	2	
24CLU6DA	DSE-II	Good Laboratory Practices and Professional Ethics	4	-	-	4	48	3	25	75	100	4	
24CLU6DB		Stem Cell Technology				4	48						
24CLU6DC		Forensic Science and Toxicology				4	48						
24CLU6DD	DSE-III	Bio-safety and Bio waste Management	4	-	-	4	48	3	25	75	100	4	
24CLU6DE		Genetic Engineering				4	48						
24CLU6DF		Tumor markers and Immunohistochemistry				4	48						
Part - IV													
24BCU6AA	AECC-III	Innovation, IPR and Entrepreneurship	2			2	24		50	-	50	2	
Total						30	360				650	25	
*Grand Total											4300	142	





### 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	24CLU5DA	Organisation of Clinical Laboratory and Lab Management
2	24CLU5DB	Human Genetics and Foetal Medicine
3	24CLU5DC	Clinical Enzymology

#### Semester VI (Elective II)

##### List of Elective Courses

S. No.	Course Code	Name of the Course
1	24CLU6DA	Good Laboratory Practices and Professional Ethics
2	24CLU6DB	Stem Cell Technology
3	24CLU6DC	Forensic Science and Toxicology

#### Semester VI (Elective III)

##### List of Elective Courses

S. No.	Course Code	Name of the Course
1	24CLU6DD	Bio-safety and Bio waste Management
2	24CLU6DE	Genetic Engineering
3	24CLU6DF	Tumor markers and Immunohistochemistry





### GENERIC ELECTIVE COURSE (GE)

The following are the course offered under Generic Elective Course

#### Semester V

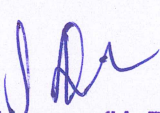
S. No.	Course Code	Course Name
1	24CLU5GA	Concepts of Health


### EXTRA CREDIT COURSES

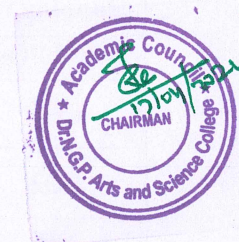
The following are the courses offered under self-study to earn extra credits:

#### Semester III

S. No.	Course Code	Course Name
1	24CLUSSA	Disaster Management
2	24CLUSSB	Community Medicine

  
 BoS Chairman/HoD  
 Department of Clinical Laboratory Technology  
 Dr N. G. P. Arts and Science College  
 Coimbatore – 641 048

 <b>Dr.N.G.P. Arts and Science College</b>		
<b>APPROVED</b>		
BoS- 17th 05.04.24	AC - 17th 17.04.24	GB -



Dr.NGPASC  
 COIMBATORE | INDIA

*B.Sc. Clinical Laboratory Technology (Students admitted during the AY 2024-25)*



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 படைப்பாக்கத்திற்கான 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 செயலாக்கத்திற்கான 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	<b>மறுமலர்ச்சிக் கவிதைகள்</b> 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	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 <a href="https://www.youtube.com/watch?v=Up55uhkk9zl">https://www.youtube.com/watch?v=Up55uhkk9zl</a>
2	<b>புதுக்கவிதைகள்</b> 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. கரிக்கிறது தாய்ப்பால்- ஆரூர் தமிழ்நாடன் 7. ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் 8. ஹைகூ கவிதைகள் - 10 கவிதைகள்	13	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 <a href="https://www.youtube.com/watch?v=dX9ZaNJMac0">https://www.youtube.com/watch?v=dX9ZaNJMac0</a>
3	<b>பெண்ணியம்</b> 1. தொலைந்து போனேன் - தாமரை 2. நீரில் அலையும் முகம் - அ. வெண்ணிலா 3. தற்காத்தல் - பொன்மணி வைரமுத்து 4. ஏனிந்த வித்தியாசங்கள் ? - மல்லிகா 5. புதையுண்ட வாழ்க்கை - சுகந்தி சுப்ரமணியன்	10	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 <a href="https://www.youtube.com/watch?v=DLabokqWEdg">https://www.youtube.com/watch?v=DLabokqWEdg</a>
4	1.இலக்கிய வரலாறு-சிறுகதையின் தோற்றமும் வளர்ச்சியும் 2. கனகாம்பரம்- கு.ப.ராஜகோபாலன் 3. கடிதம்- புதுமைப்பித்தன் 4. பொம்மை - ஜெயகாந்தன் 5. காய்ச்சமரம் - கி. ராஜநாராயணன் 6. காட்டில் ஒருமான்- அம்பை 7.வேட்கை - சூர்யகாந்தன்	14	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 <a href="https://www.youtube.com/watch?v=78u7ITN3OU8">https://www.youtube.com/watch?v=78u7ITN3OU8</a>





5	<p><b>பயிற்சிப் பகுதி</b></p> <p><b>அ. இலக்கணம்</b></p> <p>1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கிஎழுதுதல்</p> <p>2. ர,ற-ல,ழ,ள - ண,ந,னவேறுபாடு - ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல்</p> <p><b>ஆ. படைப்பாக்கம்</b></p> <p>1. கவிதை- எழுதுதல் (15 வரிகள் முதல் 30 வரிகள் வரை)</p> <p>2. சிறுகதை - எழுதுதல் (குறைந்தது 3 பக்கங்கள்)</p>	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 <a href="https://www.youtube.com/watch?v=B3wFM0QL6N8">https://www.youtube.com/watch?v=B3wFM0QL6N8</a></p> <p><a href="https://www.youtube.com/watch?v=FchTlqAtwBU">https://www.youtube.com/watch?v=FchTlqAtwBU</a></p> <p><a href="https://www.youtube.com/watch?v=gCP3gC-JQU4">https://www.youtube.com/watch?v=gCP3gC-JQU4</a></p> <p><a href="https://www.youtube.com/watch?v=p9QOHD12Yeo">https://www.youtube.com/watch?v=p9QOHD12Yeo</a></p>
	Total	60	

<b>Text book</b>	1.	தமிழ் மொழிப்பாடம் – 2024-2025தொகுப்பு: தமிழ்த்துறை, டாக்டர்என்.ஜி.பி. கலைஅறிவியல்கல்லூரி, கோயம்புத்தூர் – 641048.
<b>Reference Books</b>	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.

<b>Journal and Magazines</b>	இலக்கியஇதழ்கள்
<b>E-Resources and Website</b>	<a href="https://www.tamilvu.org">https://www.tamilvu.org</a>

<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	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

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

Course Outcomes (Cos)		
CO. No.	Course Outcomes (COs) Statement	Bloom's Tax anomy 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- मक़ीलपाठ3- 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 लीलाअपाटमेंट्स, 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	<b>Novel</b> PathummayudeAdu	14	Text book
2	<b>Novel</b> PathummayudeAdu	10	Text book
3	<b>Short Story</b> Nalinakanthi	14	Text book
4	<b>Short Story</b> Nalinakanthi	10	Text book
5	<b>Practical Application</b> Expansion of ideas, General Essay and Translation	12	Text book
	Total	60	

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

<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	-

<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	Skill Development / Employability
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<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	-

<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	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

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





<b>Text book</b>	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
<b>Reference Book</b>	1.	-

<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	-

<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	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

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>the effect of dialogue, imagery and varied genres</li> <li>any spontaneous spoken discourse and respond to them with proper sentence structure</li> <li>the transactional concept of English language</li> </ul>
<b>Prerequisite</b>	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
	<b>Total</b>	60	

<b>Text Books</b>	1.	<a href="https://www.poetryfoundation.org/poems/43588/dover-beach">https://www.poetryfoundation.org/poems/43588/dover-beach</a> .
	2.	<a href="https://portal.abuad.edu.ng/lecturer/documents/1586771577our_earth_will_not_die.doc">https://portal.abuad.edu.ng/lecturer/documents/1586771577our_earth_will_not_die.doc</a>
	3.	<a href="http://l-adam-mekler.com/chucktwo.pdf">http://l-adam-mekler.com/chucktwo.pdf</a> .
	4.	<a href="https://offthewallplays.com/wp-content/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf">https://offthewallplays.com/wp-content/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf</a> .
	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.
<b>Reference Books</b>	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.

<b>Journal and Magazines</b>	<a href="https://academic.oup.com/journals">https://academic.oup.com/journals</a>
<b>E-Resources and Website</b>	<a href="https://learnenglish.britishcouncil.org/">https://learnenglish.britishcouncil.org/</a> <a href="https://www.cambridgeenglish.org/learning-english/activities-for-learners/">https://www.cambridgeenglish.org/learning-english/activities-for-learners/</a>

<b>Learning Method</b>	Chalk and Talk/ Assignment/Seminar/ Interactive session
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<b>Focus of the Course</b>	Skill Development/ Employability
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**Semester - I**  
**CORE 1: HUMAN ANATOMY AND PHYSIOLOGY**

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24CLU1CA	HUMAN ANATOMY AND PHYSIOLOGY	CORE	48	12	-	4

Preamble	This course has been designed for students to learn and understand, The concepts of human anatomy the rule for finding the limit The anatomy of various organs of the human body The physiological roles of organ system	
Prerequisite	Knowledge on cell organisation	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom'sTaxonomy Knowledge Level
CO1	Understand the definition of anatomical terms, general anatomy and physiology of central nervous system	K2
CO2	Describe the circulatory system and understand functions of cardiac system	K3
CO3	Interpret the anatomy and physiological functions of respiratory and digestive system	K3
CO4	Extend the structure and functions of excretory and reproductive system	K3
CO5	Appreciate the anatomical techniques and anatomy and physiology of lymphatic and sensory systems	K3

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





## Syllabus

Unit	Content	Hours	E-Contents / Resources
I	Anatomical terms, Organization of the human body. Tissues -Definition, Types, characteristics and functions. Blood - Morphology, composition and functions. Skeletal System, Peripheral Nervous system and Central Nervous system - Spinal cord- Anatomy and functions. Structure of neuron. Neurotransmitters - Acetyl choline and Dopamine. Transmission of nerve impulse- myelinated and non-myelinated nerve, Brief account of resting membrane potential, action potential. Exocrine and Endocrine glands- an overview.	12	Text Book
II	Circulatory system - Structure of the heart. Blood Vessels -Structure of arterial and venous system, blood capillaries. Functions of Heart. Definitions of cardiac output and stroke volume. Principles of measurement of cardiac output. Normal values of blood pressure, heart rate and its regulation in brief	12	Reference Book
III	Respiratory system- Parts, Gross and microscopic structure of lungs. Functions of Lungs- Principles of respiration, respiratory muscles, lung volume and capacity. Transport of oxygen and carbondioxide. Digestive System: Parts of digestive system, Functions of gastro intestinal tract- intestinal secretions and movements of gastro intestinal tract	12	Text Book
IV	Excretory system - Structure of Kidney, Ureters, Urinary Bladder and Urethra. Structure and functions of nephron. Measurement and regulation of glomerular filtration rate. Mechanism of urine formation. Clearance tests- urea and creatinine. Reproductive System - Gross structure of male and female reproductive organs. Physiology of male and female reproductive system.	12	Reference Book
V	Gross and microscopic structure of lymphatic tissue - Thymus, Spleen and Lymph Node, Functions of lymphatic organs. Special Senses - Structure of Skin, Eye, Nose, Tongue, Auditory and Olfactory apparatus. Anatomical Techniques: Embalming of human cadaver, Museum Techniques, Principles of Karyotyping.	12	You Tube Videos
	<b>Total</b>	<b>60</b>	





<b>Text Book</b>	1.	William F G, 2005, "Review of Medical Physiology", 22nd edition, McGraw Hill, New Delhi.
<b>Reference Books</b>	1.	Arnould-Taylor W E, 2001, "A Textbook of Anatomy and Physiology", 3rd Edition, Stanley Thomas publishers, UK
	2.	Sembulingam K and Sembulingam P, 2010, "Essentials of Medical Physiology", 5th Edition, Jaypee Medical Pub, New Delhi.
	3.	Jain AK, 2017, "Human Anatomy and Physiology", 3rd edition, Arya Publications, New Delhi
	4.	<a href="https://www.khanacademy.org/science/health-and-medicine/human-anatomy-and-physiology">https://www.khanacademy.org/science/health-and-medicine/human-anatomy-and-physiology</a> .

<b>Journal and Magazines</b>	Archive of "Journal of Anatomy and Physiology". - PMC (nih.gov)
<b>E-Resources and Website</b>	Microsoft Word - human_anat_body.doc (cartercenter.org)
<b>Learning Method</b>	Chalk and Talk/ Assignment/Seminar
<b>Focus of the Course</b>	Skill Development/Employability





**Semester - I**  
**CORE II: GENERAL BIOCHEMISTRY**

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24CLU1CB	GENERAL BIOCHEMISTRY	CORE	48		-	4

Preamble	This course has been designed for students to learn and understand, The complex architecture and functioning of cells. The basics of various biomolecules such as carbohydrates, proteins, lipids, nucleic acids. Basics of enzymology and Endocrine system	
Prerequisite	Knowledge on biological sciences	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Recall the structure and functions of cell and cellular organelles	K2
CO2	Understand the structure and functions of carbohydrates, lipids, proteins and nucleic acid	K2
CO3	Appreciate the significance of vitamins and minerals	K3
CO4	Illustrate the classification and characteristics of enzymes	K3
CO5	Appreciate the anatomical techniques and anatomy and physiology of lymphatic and sensory systems	K3

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





## Syllabus

Unit	Content	Hours	E-Contents / Resources
I	An overview of cells and their molecular composition: - Cell Definition, Structure of prokaryotic and eukaryotic cells and differentiation between prokaryotic and eukaryotic cells, Function of cells. Cell organelles and their functions: Cell membrane, Cytosol, Endoplasmic reticulum, Ribosome, Golgi apparatus, Lysosomes, Peroxisomes, Glyoxysomes, Mitochondria, Cytoskeleton and Nucleus.	12	Text Book
II	Carbohydrates: Classification, Properties, Linear and cyclic Structure of monosaccharides, biological significance and functions of monosaccharides, Disaccharides, Polysaccharides. Lipids - Definition, classification - simple, compound and derived lipids, significance and functions of lipids.	08	Reference Book
III	Amino acids - Definition, Classification, Essential and Non-essential amino acids. Proteins - Definition, Classification of proteins, Structure of proteins- primary, secondary - $\alpha$ Helix, Beta-Pleated sheets, tertiary and Quaternary structure. Properties of peptides and proteins, Examples -Albumin, Globulins. Protein Denaturation	10	Text Book
IV	Structure of purines and pyrimidines, nucleotides and nucleosides, DNA- Double helical structure, A, B & Z forms of DNA, DNA Denaturation and Renaturation, Functions. RNA - Types and Functions. Vitamins - Definition, Classification, Sources, physiological functions and Deficiency of water- and fat-soluble vitamins. Minerals - Mineral requirement, Essential macro and micro minerals - Sources and functions.	08	Reference Book
V	Enzymes - International classification - Six main classes of enzymes, Characteristic features, Factors affecting enzyme activity, Isozymes - Lactate Dehydrogenase. Endocrine System - Hormones, Endocrine glands and their secretions, Functions - Pituitary, Thyroid, Adrenal, Male and Female reproductive hormones. Brief account of these hormonal disorders	10	You Tube Videos
	Total	48	





<b>Text Book</b>	1.	U.Satyanarayana and U.Chakrapani, 2018, "Biochemistry", 5th Edition, Elsevier, India.
<b>Reference Books</b>	1.	Deb, AC, 2001, "Fundamentals of Biochemistry", 7th Edition New central Agency, Calcutta
	2.	Devlin T M, 2010, "Textbook of Biochemistry with Clinical Correlations", 7th Edition, John Wiley and Sons, USA.
	3.	DM. Vasudevan , Sreekumari S., Kannan Vaidyanathan , 2019. Textbook Of Biochemistry for Medical Students, 9th Edition, Jaypee Brothers Medical Publishers, India.
	4.	Jain J L, Jain S and Jain N, 2012, "Biochemistry", 1st Edition, S. Chand and Company pvt Ltd, New Delhi

<b>Journal and Magazines</b>	Journal of Biological Chemistry   ScienceDirect.com by Elsevier
<b>E-Resources and Website</b>	<a href="https://www.khanacademy.org/search?page_search_query=biochemistry">https://www.khanacademy.org/search?page_search_query=biochemistry</a>
<b>Learning Method</b>	Chalk and Talk/ power point presentation/ Assignment/Seminar
<b>Focus of the Course</b>	Skill Development/Employability/Innovations





24CLU1CP	CORE PRACTICAL I : BIOCHEMISTRY	SEMESTER I
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Total Credits: 3  
Total Instructions Hours: 72 h

S.No	Contents
1	Reagent preparation - Normal solution, Molar solution, Molal solution, Percentage solution
2	Qualitative analysis of Monosaccharides - Pentose - Arabinose
3	Qualitative analysis of Hexoses - Glucose, Fructose
4	Qualitative analysis of Disaccharides - Sucrose, Maltose and Lactose.
5	Qualitative analysis of Polysaccharide - Starch.
6	Qualitative analysis of Histidine
7	Qualitative analysis of Tyrosine
8	Qualitative analysis of Tryptophan
9	Qualitative analysis of Arginine
10	Estimation of Acid Number and Iodine Number
11	Estimation of Saponification Number
12	Protein estimation by Lowry's method

#### References

- 1 Sadasivam S and Manikam A, 1996, "Biochemical methods ", 2<sup>nd</sup> Edition, New Age International publishers, New Delhi.
- 2 Plummer D T, 2004, " An Introduction to practical Biochemistry", 3rd Edition, Tata McGraw-Hill Education Pvt. Ltd, New Delhi.
- 3 Jayaraman J, 2015, "Laboratory manual in Biochemistry" 5th Edition, New Age International (P) Ltd.
- 4 Pattabiraman T N and SitaramaAcharya U, 2015, "Laboratory Manual in Biochemistry", 4th Edition, All India Traveller Book Seller.





**Semester - I**  
**IDC I : BASICS OF INFORMATION TECHNOLOGY**

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24ITU1IA	BASICS OF INFORMATION TECHNOLOGY	IDC	36	-	-	3

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• The components of Computer System and Architecture</li> <li>• The ideas about System Software and Application software</li> <li>• The development of Laboratory and Management Information System</li> </ul>
<b>Prerequisite</b>	Knowledge on basic computer system

Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the Components of Computer System and Architecture	K2
CO2	Relate the Terminology between Software and Hardware	K2
CO3	Outline the Data Transmission Medium and Topologies	K3
CO4	Understand the basics of Internet Applications with Protocols	K2
CO5	Apply and Manage E-Healthcare System	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	<b>Introduction to Computers</b> Introduction to Computers: Characteristics of Computers - Generation of Computers - Components of the Computer System, Computer Architecture: CPU -Memory unit - Input and Output Devices.	06	Text Book 1 / Reference Book1
II	<b>Computer Software</b> Software - Definition, Relationship between Hardware and Software - Software categories: System Software, Application Software- Terminology Software: Firmware, Liveware, Freeware, Shareware. Operating System: Evolution, Types, Functions	06	Text Book 1 / Reference Book 2
III	<b>Networking</b> Data Communication: Components, Data Transmission Mode- Transmission Media: Guided/ Wired Media, Unguided/ Wireless Media, Analog and Digital Transmission- Multiplexing: Multiplexers - Computer Networks: LAN, MAN, WAN - Network Topologies: Mesh, Bus, Ring, Star, Tree.	08	Text Book 1 / Reference Book1
IV	<b>Internet basics</b> Evolution of Internet - Basic Internet Terms: WWW, Web Page, Website, Home Page, Browser, URL, Hypertext, Web Server- Internet Applications: Email, FTP, Telnet, Chatting and Instant Messaging, Sending and Receiving emails, Email Address Structure, Advantages and Disadvantages.	08	Text Book 1/ Reference Book2
V	<b>Laboratory and Hospital Information System</b> Fundamentals: Overview of LIS Development and Project Planning - Data Management and Basic LIMS: Functional Requirements and Features - Data Management and Advanced LIMS: Functional Requirements and Features. Hospital Information System: Introduction to E-Healthcare- Managing a Hospital with Information - Quantitative Techniques for Decision Support.	08	Text Book 2
	<b>Total</b>	<b>36</b>	





<b>Text Books</b>	1.	Jennifer Sargunar, "Introduction to Computer Science", Pearson edition, Second Edition, 2011.
	2.	Kelkar S. A "Hospital Information System", PHI Learning Publisher, Eastern Economy Edition, 2010
<b>Reference Books</b>	1.	Christine Paszko, Elizabeth turner, "Library Information Management System", Second edition, 2002
	2.	Niranjan Shrivastava, 2013, "Fundamentals of Computers and Information System", Wiley, India
	3.	ITL Education Solutions, 2012" Introduction to Information Technology", 2nd Edition, Pearson Education, India

<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	<a href="https://www.youtube.com/watch?v=y2kg3MOk1sY">https://www.youtube.com/watch?v=y2kg3MOk1sY</a>
<b>Learning Methods</b>	Lecture/Group Discussion
<b>Focus of the Course</b>	Skill Development/Employability





## Semester – I

## AECC I: ENVIRONMENTAL STUDIES

Semester	CourseCode	CourseName	Category	L	T	P	Credits
I	24MBU1AA	ENVIRONMENTAL STUDIES	AECC	24	-	-	2

<b>Preamble</b>	This coursehas been designedfor studentsto learnand understand <ul style="list-style-type: none"><li>• Multi-disciplinary aspects of Environmental studies</li><li>• Importance toconserve the biodiversity</li><li>• Causes of Pollutionand its control</li></ul>	
<b>Prerequisite</b>	Aware the basics of environmental components	
<b>Course Outcomes (Cos)</b>		
<b>CO Number</b>	<b>Course Outcomes (Cos) Statement</b>	<b>Bloom’s Taxonomy Knowledge Level</b>
<b>CO1</b>	To understandtheimportanceofnatural resources in order to conserveforthe future	K1
<b>CO2</b>	To impart knowledge on Natural resources andits conservation	K2
<b>CO3</b>	To impart knowledge onBiodiversityandits conservation	K3
<b>CO4</b>	Tocreateawarenessoneffects,causesandcontrolofair,water,soil andnoise pollutionetc.,	K4
<b>CO5</b>	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 hotspots. 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
	<b>Total</b>	<b>24</b>	

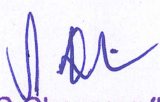





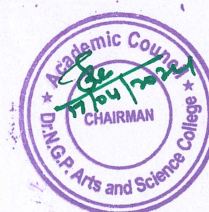
Text Book	1.	<i>Carson, R.2002. SilentSpring.HoughtonMifflinHarcourt</i>
	2.	<i>Gadgil,M., &amp;Guha,R. 1993.ThisFissuredLand:AnEcologicalHistoryofIndia.Univ.of CaliforniaPress.</i>
Reference Books	1.	<i>Gleeson, B. andLow,N. (eds.)1999.GlobalEthics andEnvironment, London, Routledge.</i>
	2.	<i>Gleick,P.H.1993.WaterinCrisis.PacificInstituteforStudiesinDev.,Environment&amp; Security. StockholmEnv.Institute,OxfordUniv. Press.</i>
	3.	<i>Groom, Martha J. Gary K.Meffe,and CarlRonald carroll.2006, Principles of Conservation Biology. Sunderland: Sinauer Associates.</i>
	4.	<i>Grumbine, R. Edward,andPandit, M.K.2013.Threats from India'sHimalaya dams. Science, 339: 36-37.</i>

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

Learning Methods	Chalk and Talk/ Seminar/ Assignment
Focus of the Course	Skill Development/Employability/Social Awareness and Environment

  
 BoS Chairman/HoD  
 Department of Clinical Laboratory Technology  
 Dr. N. G. P. Arts and Science College  
 Coimbatore – 641 048

 <b>Dr.N.G.P. Arts and Science College</b>		
<b>APPROVED</b>		
BoS- 17/04 05.04.24	AC - 17/04 17.04.24	GB -



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Semester – II							
LANGUAGE: 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 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	✓			✓	✓





24TLU2TA	LANGUAGE: TAMIL - II
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## Syllabus

Unit	Content	Hrs	Resources
1	<b>அற இலக்கியம்</b> 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	<b>அற இலக்கியம்</b> 1. நாலடியார் - அறிவுடைமை 2. மூதுரை - ஔவையார் - 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	<b>அறநெறிக் கட்டுரைகள்</b> 1. இலக்கியவரலாறு - தமிழ் உரைநடையின் தோற்றமும் வளர்ச்சியும் 2. கலைகள் - உ.வே.சா 3. சங்க நெறிகள் - வ.சுப.மாணிக்கம்	10	தமிழ்மொழிப்பாடம் இரண்டாம் பருவம் 2024-2025
4	<b>அறநெறிக் கட்டுரைகள்</b> 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	<b>பயிற்சிப் பகுதி</b> 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	



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<b>Text book</b>	1.	தமிழ் மொழிப்பாடம் – 2024-2025 தொகுப்பு: தமிழ்த்துறை, டாக்டர் என்.ஜி.பி. கலை அறிவியல் கல்லூரி, கோயம்புத்தூர் – 641048.
<b>Reference Books</b>	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.

<b>Journal and Magazines</b>	இலக்கிய இதழ்கள்
<b>E-Resources and Website</b>	<a href="https://www.tamilvu.org">https://www.tamilvu.org</a>

<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	Skill Development / Employability
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Semester – II							
LANGUAGE: HINDI – II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2HA	HINDI – II	LANGUAGE-I	48	12	-	3

<b>Preamble</b>	The writing ability and develop reading skill
	The various concepts and techniques for criticizing literature
	The techniques for expansion of ideas and translation process
<b>Prerequisite</b>	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	✓			✓	✓



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24TLU2HA	LANGUAGE: HINDI – II
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## 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: MALAYALAM- II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2MA	MALAYALAM- II	LANGUAGE- I	48	12	-	3

<b>Preamble</b>	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
<b>Prerequisite</b>	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	LANGUAGE: MALAYALAM- II
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## Syllabus

Unit	Content	Hrs	Resources
1	<b>Novel</b> Enmakaje: Chapter1- Chapter 5	14	Text book
2	<b>Novel</b> Enmakaje: Chapter 6- Chapter 10	10	Text book
3	<b>Novel</b> Enmakaje: Chapter 11- Chapter 15	14	Text book
4	<b>Autobiography</b> Neermathalam Pootha Kalam: Chapter 1- Chapter 10	10	Text book
5	<b>Autobiography</b> 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: FRENCH - II							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2FA	FRENCH - II	LANGUAGE-I	48	12	-	3

<b>Preamble</b>	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
<b>Prerequisite</b>	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	LANGUAGE: FRENCH - II
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## 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	

<b>Text book</b>	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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<b>Learning Method</b>	Lecture/ Tutorial / Student Seminar/GD/Assignment
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<b>Focus of the Course</b>	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	This course has been designed for students to learn and understand
	<ul style="list-style-type: none"> <li>• language for specific purposes through literary works, enhancing listening and reading skills.</li> <li>• communicative competencies in academics through real-world contexts, improving speaking and listening.</li> <li>• business correspondence with clarity and accuracy, focusing on writing skills like emails and essays.</li> </ul>
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			✓		



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**24ELU2EA | LANGUAGE: ENGLISH - II**  
**Syllabus**

Unit	Content	Hrs	Resources
I	<b>Listening</b> <b>Poem:</b> <b>Edgar A. Guest – Don't Quit</b> Repetition for emphasis - Tone and Emotional appeal <b>Langston Hughes – Still Here</b> Voice & Identity - Resilience & Endurance. <b>Short Story:</b> <b>R.K. Narayan – Engine Trouble</b> Emotional tone – Question for Reflection <b>Listening Talks:</b> ""Yes, We Can!"" - Barack Obama (speech) – (Audio & Visual aids) <b>Grammar:</b> Articles & Prepositions	12	<a href="https://poetryace.com/im-still-he-re/">https://poetryace.com/im-still-he re/</a>
II	<b>Speaking</b> <b>Poem:</b> <b>Robert Frost –The Road not Taken</b> Persuading and supporting opinions – logical structure – clear articulation <b>D. H Lawrence – Snake</b> Observation and Patience - Respect and Humility <b>Speaking Skills:</b> Just a Minute Talk (JAM) – Small Talk, Interviewing a Celebrity. <b>Grammar:</b> One word substitution, Loan Words.	12	<a href="http://www.poetrysoup.com">www.poetrysoup.com</a>
III	<b>Reading</b> <b>Poem:</b> <b>Chinua Achebe – Love Cycle</b> Inferring and Interpreting - Synthesis of Ideas Connection and Understanding - Adaptability and Growth <b>Short story:</b> <b>Sudha Murthy – How I taught My Grandmother to Read</b> Building comprehension – Fluency & Expression <b>Grammar:</b> Syllabification, Mon/Di/polysyllabic Comparison - Odd one Out - Rearranging the sentences (Jumbled sentences).	12	<a href="https://www.poetryfoundation.org/poems">https://www.poetryfoundation.org/poems</a>
IV	<b>Writing</b> <b>Prose:</b> <b>A. G. Gardiner: On Letter Writing</b> Clarity and Precision – Self expression <b>Writing Skills:</b> Story Building, Story Writing & Story Narration Emails (formal/informal) & General Essay Writing - (Descriptive or Narrative) <b>Grammar:</b> Spelling Pitfalls (wrongly spelt words), Agreement of verb and subject	12	<a href="https://www.gutenberg.org/">https://www.gutenberg.org/</a>
V	<b>Soft Skills</b> 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.
<b>Total</b>		<b>60</b>	



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Note: Classroom activities on LSRW skills (Examine Internal only)
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<b>Text Books</b>	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.
<b>Reference Books</b>	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.

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

<b>Learning Method</b>	Chalk and Talk/Assignment/Seminar/ Group Discussion
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<b>Focus of the Course</b>	Skill Development/ Employability
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Semester - II							
CORE : BIOANALYTICAL TECHNIQUES							
Semester	Corse Code	Course Name	Category	L	T	P	Credits
II	24CLU2CA	BIOANALYTICAL TECHNIQUES	CORE	36	-	-	3

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• Principle and working of various instruments in clinical laboratories.</li> <li>• Applications of various instruments in separation and purification of biomolecules.</li> <li>• Analysis of biomolecules using various techniques</li> </ul>
<b>Prerequisite</b>	Knowledge on Biochemical analysis

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Discuss the principle and working of pH meter and buffer preparations.	K2
CO2	Illustrate the principle, methodology and applications of chromatographic techniques.	K3
CO3	Apply the principle and applications of electrophoresis and immunotechniques.	K3
CO4	Illustrate colorimetric and spectroscopic techniques.	K3
CO5	Apply the process of centrifugation and its applications.	K3

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





24CLU2CA	CORE : BIOANALYTICAL TECHNIQUES
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## Syllabus

Unit	Content	Hrs	Resources
I	<b>Buffers</b> pH meter-principle, instrumentation and calibration. pH scale, Henderson- Hasselbalch equation, Buffer solutions, Acidic buffer and basic buffers, Buffer systems of blood Haemoglobin, Protein and Phosphate buffer system. Various ways of expressing the solute and solvent concentrations - molality, molarity, normality, mole fraction - Definitions only.	07	Text Book
II	<b>Chromatographic Techniques</b> Paper chromatography-principle, materials, methods and applications. Thin Layer chromatography- principle, Technique and applications. Gas liquid chromatography-principle and applications. Ion-exchange chromatography, Affinity chromatography and Molecular sieve chromatography- Principle and applications. High Performance Thin Layer Chromatography (HPTLC) - principle, Instrumentation, Application, High performance Liquid Chromatography (HPLC), Fast protein liquid chromatography (FPLC), Gas chromatography-mass spectrometry (GC-MS) [principles only].	08	Text Book
III	<b>Electrophoretic Techniques and Immunoassays</b> Principles and applications of paper electrophoresis, Gel electrophoresis- Agarose gel, and SDS-PAGE. Immuno electrophoresis- principle and technique, applications of Immuno electrophoresis. Principles and applications of Immunoassays- Radio immuno Assay, Isoelectric focusing Enzyme Linked Immuno Sorbent Assay.	07	Text Book
IV	<b>Photometry</b> Colorimetry- Principle- Beer - Lambert's Law. Types of filters, instrumentation and applications of colorimeter. Spectrophotometer- principle, Components of spectrophotometer and its applications, Difference between Colorimeter and spectrophotometer. Spectrofluorimeter-principle, components and applications of spectrofluorimeter. Flame photometry- principle, basic components of flame photometer. Types- Emission flame photometer, atomic absorption spectrophotometer, Basic maintenance, Quality control and Calibration of instruments.	07	Text Book
V	<b>Centrifugation</b> Principle of Centrifugation and Calibration. Centrifuges - Rotors, types - Fixed angle, swinging bucket, vertical rotors and functions of rotor. Types of Centrifuge - Bench top, High speed, Ultra centrifuge, Analytical centrifuge and Refrigerated centrifuge - Principles and applications. Determination of	07	Text Book



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	Molecular weight by sedimentation velocity method. Differential centrifugation - principle, separation of cell organelles by differential centrifugation.		
	<b>Total</b>	<b>36</b>	

	Note: Case studies related to the above topics to be discussed (Examined Internal only)
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<b>Text book</b>	1.	Sabari Ghosal and Srivastava, A.K, 2010, "Fundamentals of Bioanalytical Techniques and instrumentation", 5th Edn, Eastern Economy Edition.
	2.	Asokan, P., 2001, "Basics of Analytical Biochemistry", 1st Edition, Chinna Publications, Tamilnadu.
<b>Reference Books</b>	1.	Plummer, D T., 2004, "An introduction to Practical Biochemistry", 3rd Edition, Tata McGraw-Hill Education Pvt. Ltd, New Delhi.
	2.	Wilson.K. Walker J., 2000, "Practical Biochemistry", 10th Edition, Cambridge University Press, UK.
	3.	Katoch, R., 2011, "Analytical Techniques in Biochemistry & Molecular Biology", 1st Edition, Springer, UK.
	4.	Ghosal, Sabari, Avasthi, Anupama Sharma, 2018, "Fundamentals of Bioanalytical Techniques And Instrumentation", Second Edition, PHI Learning Pvt. Ltd, Delhi

<b>Journal and Magazines</b>	Bioanalytical Techniques - Springer   BioTechniques
<b>E-Resources and Website</b>	PubMed, ScienceDirect

<b>Learning Method</b>	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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<b>Focus of the Course</b>	Skill Development / Entrepreneurial Development / Employability / Innovations
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Semester – II							
CORE : INTERMEDIARY METABOLISM AND METABOLIC DISORDERS							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24CLU2CB	INTERMEDIARY METABOLISM AND METABOLIC DISORDERS	CORE	48	-	-	4

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• General aspects of metabolism of biomolecules.</li> <li>• Disorders associated with various metabolic pathways of biomolecules. Clinical manifestations and diagnosis of metabolic disorders.</li> </ul>
<b>Prerequisite</b>	Knowledge on Biomolecules

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Describe the pathways involved in carbohydrate metabolism and metabolic disorders.	K2
CO2	Interpretation of lipid metabolism and lipid storage diseases.	K2
CO3	Illustrate metabolism of proteins and its disorders.	K2
CO4	Sketch the metabolic reactions of nucleic acids and disorders associated with it.	K2
CO5	Illustrate biological oxidation and mitochondrial shuttle system.	K3

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





24CLU2CB	<b>CORE : INTERMEDIARY METABOLISM AND METABOLIC DISORDERS</b>
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### Syllabus

Unit	Content	Hrs	Resources
I	<b>Carbohydrate metabolism and metabolic disorders</b> Introduction to metabolism: Types of metabolic reactions - Anabolism, catabolism and amphibolism. Carbohydrate metabolism: Glycolysis, Tri Carboxylic Acid (TCA) cycle, Glycogenesis and Glycogenolysis. Alternative pathways: Hexose Monophosphate (HMP) Shunt, gluconeogenesis (Structures not needed). Disorders of carbohydrate metabolism: Hypoglycemia. Hyperglycemia- Diabetes mellitus: types, clinical manifestation and diagnosis, Galactosemia and Glycogen storage diseases.	12	Text Book
II	<b>Lipid metabolism and metabolic disorders</b> Lipid metabolism: Fatty acid oxidation - $\alpha$ , $\beta$ oxidation (odd numbered fatty acid propionic acid, even numbered chain fatty acid- palmitic acid), $\omega$ oxidation. Biosynthesis of saturated- and unsaturated fatty acids. Biosynthesis of cholesterol (Structures not needed). Disorders of Lipid Metabolism: Hyperlipoproteinemia and Hypolipoproteinemia. Lipid storage diseases: Artherosclerosis, TaySach's disease and Niemann - Pick disease.	08	Text Book
III	<b>Protein metabolism and metabolic disorders</b> Protein metabolism: general breakdown of protein- Deamination, Transamination, Decarboxylation and Urea cycle (Structures not needed). Overall reaction and energetics. Disorders of amino acid metabolism and its clinical manifestation: Phenylketonuria, Maple syrup disease, Alkaptonuria and Hartnup's disease.	10	Text Book
IV	<b>Nucleic acid metabolism and metabolic disorders</b> Nucleic acid metabolism: Biosynthesis and degradation of purine and pyrimidine nucleotides- Salvage pathway and de novo synthesis (Structures not needed) Disorders of purine metabolism: Hyperuricemia and Gout, Hypouricemia, Xanthinuria, Von Gierke diseases. Disorders of Pyrimidine metabolism: Orotic aciduria.	08	Text Book
V	<b>Biological oxidation</b> Mitochondrial electron transport chain (ETC): High energy compounds, electron carriers, Synthesis of adenosine tri phosphate (ATP), Electron Transport Chain components of ETC, Inhibitors of ETC, Oxidative phosphorylation, Inhibitors of oxidative phosphorylation, Mitochondrial shuttle system.	10	Text Book
	<b>Total</b>	<b>48</b>	



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	Note: Case studies related to the above topics to be discussed (Examined Internal only)
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<b>Text book</b>	1.	Jain J L, Jain S and Jain N, 2016, "Biochemistry", Revised Edition, S. Chand and Company Pvt Ltd, New Delhi.
	2.	Satyanarayana U and Chakrapani U, 2018, "Biochemistry", 5th Edition, Elsevier, India
<b>Reference Books</b>	1.	Burtis C.A, 2005, "Tietz Textbook of Clinical Chemistry and Molecular Diagnosis" 5th Edition, William Heinmann, Medical Books Ltd, New Zealand..
	2.	Voet D, 2012, "Fundamentals of Biochemistry", 4th Edition, John Wiley and Sons, New Jersey.
	3.	Nelson D.L., 2017, "Lehninger Principles of Biochemistry", 7th Edition, W.H. Freeman & Co, New York.
	4.	Murray KR, Granner KD, Mayes PA and Rodwell WV, 2018, "Harper's Biochemistry", 31st Edition, Appleton and Lange Stamford.

<b>Journal and Magazines</b>	<a href="https://doi.org/10.36303/SAJAA.3050">https://doi.org/10.36303/SAJAA.3050</a>
<b>E-Resources and Website</b>	<a href="https://doi.org/10.1042/EBC20190041">https://doi.org/10.1042/EBC20190041</a>

<b>Learning Method</b>	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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<b>Focus of the Course</b>	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester - II CORE PRACTICAL: CLINICAL BIOCHEMISTRY - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24CLU2CP	CLINICAL BIOCHEMISTRY - I	CORE	4	4	48	2

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• The preparation and calibration of buffer solutions</li> <li>• The pH of reagents used to estimate the biomolecules in urine</li> <li>• The techniques to separate sugars and amino acids</li> </ul>
<b>Prerequisite</b>	Knowledge on kidney function tests

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Evaluate buffer solution preparation and pH adjustments	K4
CO2	Interpret the collection and preservation of urine sample	K4
CO3	Estimate the amount of metabolites in urine sample	K4
CO4	Estimate the level of electrolytes in urine sample	K4
CO5	Demonstrate the techniques to separate biomolecules	K3

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





24CLU2CP	CORE PRACTICAL: CLINICAL BIOCHEMISTRY - I
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## Syllabus

S.No	Contents
1	Preparation of buffers and calibration
2	Measurement and adjustment of pH
3	Urine collection and Preservation
4	Quantitative analysis of urea in urine
5	Quantitative analysis of uric acid in urine
6	Quantitative analysis of creatinine in urine
7	Quantitative analysis of phosphorus in urine
8	Quantitative analysis of calcium in urine
9	Quantitative analysis of protein in urine
10	Quantitative analysis of sodium and potassium in urine)
11	Separation of amino acids by paper chromatography)
12	Separation of sugars by thin layer chromatography)

Manuals	1.	Jayaraman J, 2015, "Laboratory manual in Biochemistry" 5th Edition, New Age International (P) Ltd.
	2.	Pattabiraman T N and SitaramaAcharya U, 2015, "Laboratory Manual in Biochemistry", 4th Edition, All India Traveller Book Seller.

Learning Method	Hands on Experiments
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Focus of the Course	Skill Development
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Semester - II							
IDC: COMPUTER APPLICATIONS IN CLINICAL LABORATORY							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24ITU2IM	COMPUTER APPLICATIONS IN CLINICAL LABORATORY	IDC	36	-	48	5

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none"><li>professional-looking documents and presentations</li><li>statistical analysis</li><li>patterns and trends in data sets</li></ul>	
Prerequisite	Knowledge on Logical Thinking	
Course Outcomes (COs)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the concept of word processing	K2
CO2	Create the presentations with animation	K3
CO3	Understand the concept of spreadsheet	K2
CO4	Analyze the Dataset in spreadsheet	K4
CO5	Apply the Data Visualization for various data set	K3

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





<b>24ITU2IM</b>	<b>IDC: COMPUTER APPLICATIONS IN CLINICAL LABORATORY</b>
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**Syllabus**

Unit	Content	Hours	E-Contents / Resources
I	<b>Word Processing</b> MS - Word: Create a word document - Enter, Select and Copy text - Save the document - Correct Proofing Errors - Apply Styles - Insert a Picture - Page Layout - Create a table - convert text to table - Print Document. 1 Create and Format a word document 2 Create Healthcare Organizational Chart 3 Mail merge for advertising Master Health Check-up	17	Text Book
II	<b>Presentation software</b> MS - PowerPoint Presentation: Create a Slide - Insert a Picture - Apply a Theme - Animations - Run the Slideshow - Presenter view - Choose and Use the template - Rehearse the timings - Print the slideshow 4 Preparation of Blood Donation Camp advertisement using PowerPoint 5 Create Agenda for clinical laboratory practice 6 Create professional medical presentation using transition	17	Text Book
III	<b>Spreadsheet</b> MS-Excel: Entering Data in Excel - Transforming and Managing data - Sorting and Filtering - Formulae and Functions: Summing and Subtracting values - Basic calculations - Count function - Text functions 7 Formatting an Excel Sheet for patient billing statements 8 Sorting and Filtering the Blood group from Blood bank in Excel 9 Calculation using formulae in Excel	17	Reference Book
IV	<b>Data Analysis in Spreadsheet</b> Data Analysis: Pivot tables - Create a pivot table - Calculation and grouping - Power Pivot and Power Query - Analysis ToolPak - Activate Analysis ToolPak add-in - Components of Analysis ToolPak - Analyzing data using ToolPak 10 Import medical data from webpage, text file and remove duplicates 11 Analyze clinical trial dataset using ToolPak 12 Create Students scores by grade and subjects using pivot chart	17	Reference Book
V	<b>Data Visualization</b> Data Visualization: Charts - Insert a chart - Add or remove chart elements - Different types of charts - Column and Bar charts - Line	16	Reference Book





	Charts - Pie Chart or Doughnut chart - Histogram chart - Area Chart - Scatter Chart and Bubble Chart 13 Visualize the patient history details using chart in Excel 14 Categorize the diabetes dataset and visualize it in various chart elements 15 Classify Heart disease dataset and prepare age-wise chart		
	<b>Total</b>	<b>84</b>	

<b>Text Books</b>	1.	Michael Price, 2019, "Office 2019", First Edition, BPB Publication, India.
	2.	Lokesh Lalwani, 2022, "Excel 2019 All-in-One", Reprint Second Edition, BPB Publication, India.
<b>References</b>	1.	Joan Lambert, 2016, "Microsoft PowerPoint 2016 Step by Step", First Edition, Microsoft Press.
	2.	Manisha Nigam, 2020, "Advanced Analytics with Excel 2019", First Edition, BPB Publication, India.
	3.	Michael Price, 2021, "Microsoft 365 in easy steps: Covers Microsoft 365 and Office 2019" In Easy Steps Ltd.

<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	<a href="https://www.coursera.org/specializations/data-analysis-visualization-foundations">https://www.coursera.org/specializations/data-analysis-visualization-foundations</a>

<b>Learning Methods</b>	Lecture, Demonstration
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<b>Focus of the Course</b>	Skill Development/Employability
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Semester – II							
AECC: BASIC TAMIL							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2AA	BASIC TAMIL	AECC	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 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	✓			✓	✓



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24TLU2AA	AECC: 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	<b>தமிழ் மொழியின் அடிப்படைக் கூறுகள்</b> 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	<b>சொற்களின் அறிமுகம்</b> 1.பெயர்ச்சொல் 2.வினைச்சொல் – விளக்கம் (எ.கா.) 3.பயிற்சி	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
3	<b>குறிப்பு எழுதுதல்</b> 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	<b>குறிப்பு எழுதுதல்</b> 1. ஊர்வன, பறப்பன, விலங்குகள் 2.மனிதர்களின் உறவுப்பெயர்கள் 3. ஊர்களின்பெயர்கள் (எண்ணிக்கை 10)	05	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
5	<b>பயிற்சிப் பகுதி (உரையாடும் இடங்கள்)</b> வகுப்பறை, பேருந்து நிலையம், சந்தை- பேசுதல்,எழுதுதல்.	04	அடிப்படைத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
	Total	24	



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## 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	<a href="https://www.tamilvu.org">https://www.tamilvu.org</a>
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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: ADVANCED TAMIL							
Semester	Course Code	Course Name	Category	L	T	P	Credits
II	24TLU2AB	ADVANCED TAMIL	AECC	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

AECC: ADVANCED TAMIL

**இளங்கலை 2024- 2025ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது**  
**(10 மற்றும் 12 - ஆம் வகுப்புகளில் தமிழ் மொழிப்பாடம்**  
**பயின்றவர்களுக்கு உரியது)**  
**(பருவத் தேர்வு இல்லை )**  
**Syllabus**

Unit	Content	Hrs	Resources
1	<b>கவிதைகள்</b> 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	<b>கட்டுரை</b> கட்டுரைத் தொகுப்பு - நல்வாழ்வு - டாக்டர் மு.வரதராசன் 1. நம்பிக்கை 2. புலனடக்கம் 3. பண்பாடு	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
3	<b>இலக்கணம்</b> 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	<b>கடிதங்கள்</b> 1. பாராட்டுக் கடிதம் 2. நன்றிக் கடிதம் 3. அழைப்புக் கடிதம் 4. அலுவலக விண்ணப்பங்கள்	05	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
5	<b>பயிற்சிப் பகுதி</b> படைப்பாக்கப் பகுதி: பொதுத் தலைப்புகளில் கவிதை, கட்டுரை எழுதச்செய்தல்	04	சிறப்புத் தமிழ்மொழிப் பாடம் இரண்டாம் பருவம் 2024-2025
Total		24	



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## 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	<a href="https://www.tamilvu.org">https://www.tamilvu.org</a>
Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment
Focus of the Course	Skill Development / Employability



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Semester – II AECC: 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"> <li>• Concepts of Human Rights</li> <li>• Human Rights Violation and Redressal Mechanism.</li> <li>• Rights to Women and Child.</li> </ul>
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	✓		✓		✓



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

Unit	Content	Hrs	Resources
I	<b>Introduction to Human Rights</b> 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	<b>Human Rights in India</b> 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	<b>Human Rights Violation and Redressal Mechanism</b> 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	<b>Rights of Women and Child</b> 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	<b>Civil and Political Rights of Women</b> 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
<b>Total</b>		<b>24</b>	

<b>Note:</b> Case studies related to the above topics to be discussed (Examined Internal only)
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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 Books	1.	Mandagadde Rama Jois, 2015, "Human Rights", Bharatiya Values, Bharatiya 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. <a href="https://doi.org/10.1093/hrlr/ngae007">https://doi.org/10.1093/hrlr/ngae007</a>
E-Resources and Website	Women's Rights as Human Rights, <a href="https://www.ohchr.org/sites/default/files/Documents/Events/WHRD/WomenRightsAreHR.pdf">https://www.ohchr.org/sites/default/files/Documents/Events/WHRD/WomenRightsAreHR.pdf</a>

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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*J.K.R.*  
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 <b>Dr.N.G.P Arts and Science College</b>		
<b>APPROVED</b>		
BoS- 18 <sup>th</sup>	AC - 18 <sup>th</sup>	GB -
8-11-2024	26-11-2024	



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