



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

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A++' Grade (3rd Cycle-3.64 CGPA)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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REGULATIONS 2025-26 for Undergraduate Programme (Outcome Based Education model with Choice Based Credit System)

Bachelor of Science in Computer Science with Cyber Security Degree

(For the students admitted during the academic year 2025-26)

Programme: B.Sc. Computer Science with Cyber Security.

Eligibility

Candidates for admission to the first year of the **Bachelor of Science (Computer Science with Cyber Security)** Degree Programme shall be required to have passed in the Higher Secondary Examinations conducted by the Government of Tamil Nadu in the relevant subjects or an Examination accepted as equivalent thereto by the Academic Council. Subject to such other conditions as may be prescribed there to are permitted to appear and qualify with any one of the following subjects: Mathematics / Computer Science / Statistics / Business Mathematics and wherever the students have not studied Mathematics, the necessary Mathematics knowledge be imparted through Tutorial/ Bridge Course.

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

1. To have a strong foundation of computer science principles which will provide a promising professional career in real world industry.
2. To be able to equip themselves in research and development, entrepreneurship, and start-up initiator as an individual or collaborative manner utilizing interpersonal skills.
3. To contribute to society and the cyber security community by participating in outreach programs, creating awareness and educating the public about safe computing practices.



PROGRAMME OUTCOMES

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

PO Number	PO Statement
PO1	To have a strong understanding of fundamental concepts of computer science and its related disciplines.
PO2	To develop viable solutions for IT enabled services by applying analytic and programming skills.
PO3	To exhibit the ability in adapting evolving technologies and new problem domains thus fostering creativity and innovation in cyber security discipline.
PO4	To engage in continuous learning, keeping pace with emerging trends, technologies, and threats in the field of cyber security.
PO5	To demonstrate social responsibility through ethics and values and environmental studies related activities in the society.



B.Sc. Computer Science with Cyber Security
Credit Distribution

Part	Subjects	No. of Papers	Credit	Semester No.
I (12 Credits)	Tamil / Hindi / French/Malayalam	4	4 x 3 = 12	I to IV
II (12 Credits)	English	4	4 x 3 = 12	I to IV
III (108 Credits)	Core (Credits 4)	10	10 x 4 = 40	I to VI
	Core (Credits 3)	2	2 x 3 = 6	I to VI
	Core Practical (Credits 5)	2	2 x 5 = 10	III to IV
	Core Project (Credits 4)	1	1 x 4 = 4	VI
	Core Practical (Credits 2)	3	3 x 2 = 6	I to VI
	Inter Departmental Course (IDC)	4	4 x 4 = 16	I to IV
	Discipline Specific Elective (DSE)	3	3 x 4 = 12	V & VI
	Skill Enhancement Course (SEC)	4	4 x 2 = 8	III, IV, V&VI
	Industrial Training	1	1 x 2 = 2	V
IV (8 Credits)	Environmental Studies (AECC)	1	2	I
	Basic Tamil/Advanced Tamil/ Human Rights, & Women's Rights (AECC)	1	2	II
	Generic Elective (GE)	1	2	V
	Innovation & IPR/ Innovation, IPR & Entrepreneurship (AECC)	1	2	VI
V (2 Credits)	NSS/NCC/YRC/RRC/Yoga/Sports/ Clubs/Health and Wellness	-	2	I - II
TOTAL CREDITS			142	



CURRICULUM

B.Sc. Computer Science with Cyber Security
A.Y:25-26

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												
25TLU1TA	Language - I	Tamil-I	4	1	-	5	60	3	25	75	100	3
25TLU1HA		Hindi-I				5	60					
25TLU1MA		Malayalam-I				5	60					
25TLU1FA		French – I				5	60					
Part – II												
25ELU1EA	Language - II	English-I	4	-	1	5	60	3	25	75	100	3
Part – III												
25AIU1CA	Core - I	Problem Solving and Programming in C	4	1	-	5	60	3	25	75	100	4
25CYU1CA	Core -II	Digital Logic Design	4	-	-	4	48	3	25	75	100	4
25CYU1CP	Core Practical - I	Programming in C	-	-	4	4	48	3	40	60	100	2
25MTU1ID	IDC-I	Mathematics for Computing- I	4	1	-	5	60	3	25	75	100	4
Part – IV												
25MBU1AA	AECC-I	Environmental Studies	2	-	-	2	24	-	50	-	50	2
Part – V												
25CYU1XA	Extension Activity	NSS/NCC/YRC /RRC/Yoga/Sports/Clubs	-	-	-	-	-	-	50	-	50	1
Total			22	3	5	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												
25TLU2TA	Language - I	Tamil-II	4	1	-	5	60	3	25	75	100	3
25TLU2HA		Hindi-II				5	60					
25TLU2MA		Malayalam-II				5	60					
25TLU2FA		French – II				5	60					
Part – II												
25ELU2EA	Language - II	English-II	4	-	1	5	60	3	25	75	100	3
Part – III												
25CAU2CA	Core - III	Data Structures	4	1	-	5	60	3	25	75	100	4
25CSU2CA	Core -IV	Object Oriented Programming with C++	4	-	-	4	48	3	25	75	100	4
25CYU2CP	Core Practical - II	Data Structures and C++	-	-	4	4	48	3	40	60	100	2
25MTU2ID	IDC-II	Mathematics for Computing - II	4	1	-	5	60	3	25	75	100	4
Part – IV												
25TLU2AA	AECC-II	Basic Tamil	2	-	-	2	24	-	50	-	50	2
25TLU2AB		Advanced Tamil										
25CRU2AA		Human Rights & Women's Rights										
Part – V												
25CYU2XA	Extension Activity	NSS/NCC/ YRC/RRC/ Yoga/Sports/ Club/Health and Wellness	-	-	-	-	-	-	50	-	50	1
Total			22	3	5	30	360				700	23



Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Third Semester												
Part – I												
25TLU3TA	Language - I	Tamil-III	3	1	-	4	48	3	25	75	100	3
25TLU3HA		Hindi-III				4	48					
25TLU3MA		Malayalam-III				4	48					
25TLU3FA		French – III				4	48					
Part – II												
25ELU3EA	Language - II	English-III	3	1	-	4	48	3	25	75	100	3
Part – III												
25CYU3CA	Core - V	Computer Architecture	4	-	-	4	48	3	25	75	100	4
25CYU3CB	Core -VI	Operating Systems Fundamentals	3	-	-	3	36	3	25	75	100	3
25CYU3CM	Core Practical III	Database Design Concepts	3	-	4	7	84	3	40	60	100	5
25CYU3SP	SEC-I	Python Programming	-	-	4	4	48	3	40	60	100	2
25MTU3ID	IDC-III	Discrete Mathematics	4	-	-	4	48	3	25	75	100	4
Total			20	2	8	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												
25TLU4TA	Language I	Tamil-IV	3	1	-	4	48	3	25	75	100	3
25TLU4HA		Hindi-IV				4	48					
25TLU4MA		Malayalam-IV				4	48					
25TLU4FA		French – IV				4	48					
Part – II												
25ELU4EA	Language - II	English-IV	3	1	-	4	48	3	25	75	100	3
Part – III												
25CYU4CA	Core -VII	Computer Networking Principles	4	-	-	4	48	3	25	75	100	4
25CYU4CB	Core VIII	Principles of Cyber Security	3	-	-	3	36	3	25	75	100	3
25CYU4CM	Core Practical -IV	Java Programming	3	-	4	7	84	3	40	60	100	5
25CYU4SP	SEC-II	Network Programming	-	-	4	4	48	3	40	60	100	2
25CRU4IA	IDC -IV	Financial Cybersecurity	4	-	-	4	48	3	25	75	100	4
Total			20	2	8	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	
Fifth Semester												
Part – III												
25CYU5CA	Core - IX	Linux and Shell Programming	4	1	-	5	60	3	25	75	100	4
25CYU5CB	Core -X	Secure Software Engineering	4	1	-	5	60	3	25	75	100	4
25CYU5CC	Core -XI	Machine Learning in Cyber Security	4	1	-	5	60	3	25	75	100	4
25CYU5CP	Core Practical -V	Linux and Shell Programming	-	-	4	4	48	3	40	60	100	2
25CYU5CQ	Core Practical -VI	Machine Learning in Cyber Security	-	-	4	3	48	3	40	60	100	2
25CYU5SP	SEC -III	Digital Forensics Analysis	-	-	4	4	48	3	40	60	100	2
25CYU5DA	DSE-I	Network Security and Cryptography	4	1	-	5	60	3	25	75	100	4
25CYU5DB		Cybercrime and Digital Forensics										
25CYU5DC		Data Warehousing and Mining										
25CYU5TA	IT	Industrial Training	-	-	-	-	-	3	40	60	100	2
Part – IV												
	GE		2	-	-	2	24	3	50	-	50	2
Total			18	4	8	30	360				750	26



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												
25CYU6CA	Core - XII	Web Application Security	4	-	-	4	48	3	25	75	100	4
25CYU6CB	Core Practical - VII	Web Application Security	4	-	-	4	48	3	40	60	100	2
25CYU6SP	SEC -IV	Vulnerability Assessment and Penetration Testing	-	-	4	4	48	3	40	60	100	2
25CYU6CV	Core – XIII	Project and Viva voce	-	-	8	8	96	3	40	60	100	4
25CYU6DA	DSE –II	Cloud Security and Virtualization	4	-	-	4	48	3	25	75	100	4
25CYU6DB		Ethical Hacking and System Defense										
25CYU6DC		Big Data Analytics										
25CYU6DD	DSE –III	Block Chain Technology	4	-	-	4	48	3	25	75	100	4
25CYU6DE		IoT Security										
25CYU6DF		Deep Learning										
Part – IV												
25BCU6AA	AECC III	Innovation, IPR and Entrepreneurship	2	-	-	2	24	3	50	-	50	2
Total			18	-	12	30	360				650	22
*Grand Total											4200	142

***Total Credit Should not exceed 142 credits**



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.	25CYU5DA	Network Security and Cryptography
2.	25CYU5DB	Cybercrime and Digital Forensics
3.	25CYU5DC	Data Warehousing and Mining

Semester VI (Elective II)

List of Elective Courses

S. No.	Course Code	Name of the Course
1.	25CYU6DA	Cloud Security and Virtualization
2.	25CYU6DB	Ethical Hacking and System Defense
3.	25CYU6DC	Big Data Analytics

Semester VI (Elective III)

List of Elective Courses

S. No.	Course Code	Name of the Course
1.	25CYU6DD	Block Chain Technology
2.	25CYU6DE	IoT Security
3.	25CYU6DF	Deep Learning

GENERIC ELECTIVE COURSES(GE)

The following is the course offered under Generic Elective Course

Semester V (GE)

S. No.	Course Code	Name of the Course
1	25CYU5GA	Basics of Cyber Security

EXTRA CREDIT COURSES

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

Semester III

S. No.	Course Code	Name of the Course
1	25CYUSSA	Web Essentials
2	25CYUSSB	Digital Marketing



Semester – I							
LANGUAGE – I: TAMIL - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1TA	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	✓			✓	✓



25TLU1TA	TAMIL - I
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Syllabus

Unit	Content	Hrs	Resources
1	<p>மறுமலர்ச்சிக் கவிதைகள்</p> <ol style="list-style-type: none"> இலக்கிய வரலாறு - மறுமலர்ச்சிக் கவிஞர்களின் தமிழ்ப்பணிகள் பாரததேசம்- பாரதியார் படி - பாரதிதாசன் தமிழரின் பெருமை- நாமக்கல் கவிஞர் தமிழ்க் கொலை புரியாதீர் - புலவர் குழந்தை திரைத்தமிழ் <p>அ) 'விஞ்ஞானத்த வளர்க்கப் போறண்டி' எனத் தொடங்கும் பாடல் - உடுமலை நாராயண கவி</p> <p>ஆ) 'சும்மா கிடந்த நிலத்தை' எனத் தொடங்கும் பாடல் - பட்டுக்கோட்டை கல்யாண சுந்தரனார்</p> <p>இ) 'சமரசம் உலாவும் இடமே' எனத் தொடங்கும் பாடல் - மருதகாசி</p> <p>ஈ) 'உன்னை அறிந்தால்' எனத் தொடங்கும் பாடல் - கண்ணதாசன்</p>	13	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 https://www.youtube.com/watch?v=Up55uhkk9z !</p>
2	<p>புதுக்கவிதைகள்</p> <ol style="list-style-type: none"> இலக்கிய வரலாறு - புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் கடமையைச் செய் - மீரா ஒடு ஒடு சங்கிலி - சிற்பி பாலசுப்பிரமணியம் ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான் மரங்கள் - மு.மேத்தா கறிக்கிறது தாய்ப்பால் - ஆரூர் தமிழ்நாடன் ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் ஹைகூ கவிதைகள் - 10 கவிதைகள் 	13	<p>தமிழ்மொழிப்பாடம். முதற்பருவம் 2025-2026 https://www.youtube.com/watch?v=dX9ZaNJMa co</p>
3	<p>பெண்ணியம்</p> <ol style="list-style-type: none"> தொலைந்து போனேன் - தாமரை நீரில் அலையும் முகம் - அ. வெண்ணிலா தற்காத்தல் - பொன்மணி வைரமுத்து ஏனிந்த வித்தியாசங்கள்? - மல்லிகா புதையுண்ட வாழ்க்கை - சுசந்தி சுப்ரமணியன் 	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 https://www.youtube.com/watch?v=DLabokqWE dg</p>
4	<p>சிறுகதைகள்</p> <ol style="list-style-type: none"> இலக்கிய வரலாறு - சிறுகதையின் தோற்றமும் வளர்ச்சியும் கனகாம்பரம் - கு.ப.ராஜகோபாலன் கடிதம்- புதுமைப்பித்தன் பொம்மை - ஜெயகாந்தன் காய்ச்சமரம் - கி. ராஜநாராயணன் காட்டில் ஒருமான் - அம்பை வேட்கை - சூர்யகாந்தன் 	14	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 https://www.youtube.com/watch?v=78u7iTN3O U8</p>



5	<p>பயிற்சிப் பகுதி</p> <p>அ. இலக்கணம்</p> <p>1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கி எழுதுதல்</p> <p>2. ர,ற-ல,ழ,ள - ண,ந,ன வேறுபாடு - ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல்</p> <p>ஆ. படைப்பாக்கம்</p> <p>1. கவிதை- எழுதுதல் (15 வரிகள் முதல் 30 வரிகள் வரை)</p> <p>2. சிறுகதை - எழுதுதல் (குறைந்தது 3 பக்கங்கள்)</p>	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026</p> <p>https://www.youtube.com/watch?v=B3wfM0QL6N8</p> <p>https://www.youtube.com/watch?v=FchTlqAtwBU</p> <p>https://www.youtube.com/watch?v=gCP3gC-JQU4</p> <p>https://www.youtube.com/watch?v=p9QOHD12Yeo</p>
	Total	60	

Text book	1.	தமிழ் மொழிப்பாடம் - 2025-2026 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 – I							
LANGUAGE –I: HINDI – I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1HA	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	✓			✓	✓



25TLU1HA

HINDI – I

Syllabus

Unit	Content	Hrs	Resources
1	गद्य – नूतन गद्य संग्रह (जयप्रकाश) पाठ1- रजिया पाठ, 2- मक्रील पाठ 3- बहता पानी निर्मला पाठ4- राष्ट्रपिता महात्मा गाँधी	13	Text Book
2	कहानी कुंज- डॉ वी.पी. 'अमिताभ'(पाठ 1-4)	13	Text Book
3	व्याकरण : शब्दविचार (संज्ञा, सर्वनाम,विशेषण)	12	Text Book
4	अनुच्छेद लेखन	12	Text Book
5	अनुवाद अभ्यास-III (केवल अंग्रेजी से हिन्दी में) (पाठ1 to 10)	10	Text Book
	Total	60	

Text books	1.	प्रकाशक: सुमित्र प्रकाशन 204 लीला अपार्टमेंट्स, 15 हेस्टिंग्स रोड अशोक नगर इलाहाबाद-211001
	2.	प्रकाशक: गोविन्द प्रकाशन सदर बाजार, मथुरा उत्तरप्रदेश-281001
	3.	पुस्तक: व्याकरण प्रदिप – रामदेव प्रकाशक: हिन्दी भवन 36 टेंगोर नगर इलाहाबाद-211024
	4.	पुस्तक: व्याकरण प्रदिप – रामदेव प्रकाशक: 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							
LANGUAGE – I : MALAYALAM- I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1MA	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	✓			✓	✓



25TLU1MA

MALAYALAM-I

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							
LANGUAGE - I : FRENCH - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1FA	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	✓			✓	✓



25TLU1FA

FRENCH - I

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, ImprimeenRoumanie 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							
LANGUAGE II: ENGLISH - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25ELU1EA	ENGLISH - I	LANGUAGE- II	48	-	12	3

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



25ELU1EA | ENGLISH - I

Syllabus

Unit	Content	Hrs	Resources
I	Genre Studies Mathew Arnold: Dover Beach - Author's Biography- title indications- outline- paraphrasing the poem- context of poem- form- poetic devices- enjambment- techniques- Annotations 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 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 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 Sheila Nayampalli Baruna: Alone - Author's Biography-narrative structure- passage analysis- insight of ideas-cohesion and context- style- language techniques.	12	Text Book
II	Listening Skills 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)	13	britishcouncil.org cambridgeenglish.org
III	Speaking Skills 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	11	britishcouncil.org cambridgeenglish.org
IV	Reading Skills Study Skills: Skimming and Scanning- Reading different kinds of texts- Types of reading-Developing a good reading speed, reading aloud, Referencing skill- Word Power (Denotation and Connotation) - Reading comprehension, Data interpretation -Charts, Graphs, Advertisements - Cognitive Skills- Inference Making -	12	britishcouncil.org cambridgeenglish.org



	Interpretation		
V	Writing Skills Sentence patterns, Note- making and note taking- Strategies - Paragraph writing: Structure and Principles - Academic Writing - Formal and Informal Letters, Report, Book /Movie Review - Infographics Writing	12	britishcouncil.org cambridgeenglish.org
	Total	60	

	Note: Case studies related to the above topics to be discussed (Examined Internal only)
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Text book	1.	https://www.poetryfoundation.org/poems/43588/doverbeach
	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/wpcontent/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf
	5.	Nation, I. S. P and Jonathan Newton. 2009. <i>Teaching ESL/EFL Listening and Speaking</i> . Routledge, New York, United States of America.
	6.	Prabha, Dr. R. Vithya & S. Nithya Devi. 2019. <i>Sparkle</i> . (1 st Edn.) McGraw - Hill Education, Chennai, India.
Reference Books	1.	Rudzka, Brygida -Ostyn, 2003. <i>Word Power: Phrasal Verbs and Compounds: A Cognitive Approach</i> , Mouton de Gruyter, New York, United States of America.
	2.	Swales, John M. & Feak, Christine B. 2012. <i>Academic Writing for Graduate Students: Essential Tasks and Skills</i> , University of Michigan Press, Michigan, United States of America.
	3.	Sen, Leena. 2007. <i>Communication Skills</i> , Second Edition, Prentice Hall India Learning Private Limited, New Delhi, India.
	4.	O. Greene, John. 2021. <i>Essentials of Communication Skill and Skill Enhancement: A Primer for Students and Professionals</i> , 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/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Employability
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Semester – I CORE I: PROBLEM SOLVING AND PROGRAMMING IN C							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25AIU1CA	PROBLEM SOLVING AND PROGRAMMING IN C	CORE	48	12	-	4

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none"> • The fundamental aspects of programming and problem solving • The C language fundamentals • The representation and working of arrays, pointers, functions and files.
Prerequisite	Knowledge on Logical Thinking

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Illustrate the basic principles of programming and problem solving.	K2
CO2	Understand the fundamentals of C Language.	K2
CO3	Implement decision making using branching and looping	K3
CO4	Develop programs using arrays and functions.	K3
CO5	Execute programs using pointers, structures and files.	K3

Mapping with Program Outcomes:

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



25AIU1CA	PROBLEM SOLVING AND PROGRAMMING IN C
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction: Types of Programming Languages - High level Languages - Assembly Languages - Machine Level Languages - System Software - Operating Systems - Compiler - Linker and Interpreter. Problem Solving Strategies: Steps involved in problem solving - Algorithms - Flow Charts - Symbols used in Flow Charts - Pseudo Codes - Structured Programming - Sequence - Selection - Repetition - Modular Programming..	12	Text Books/ Reference Books/ NPTEL
II	C Language Fundamentals: Introduction to C - Basic Structure of C Program - Constants - Variables - Data Types - Operators - Expressions - Evaluation of Expressions - Operator Precedence and Associativity - Managing the Input and Output - Formatted I/O - Unformatted I/O - Storage classes- Simple programs for logic building.	12	Text Books/ Reference Books
III	Branching: Simple if Statement - if-else statement - elseif Ladder - Switch statement - goto, break and continue statements. Looping: while loop - do-while loop -for loop- nested for loop - Pre-processor Directives: Macro substitution - File inclusion - Compiler control directives. Arrays: Introduction - Types of arrays - Declaration and Initialization of Arrays - Dynamic Arrays	12	Text Books/ Reference Books
IV	Strings: Declaring and Initializing the string variables - String handling functions. Functions - Need for functions - Elements of functions - Category of functions - Passing arrays to functions - Recursion. Pointers: Understanding Pointers - Declaration and Initialization of pointer variables - Accessing variables through pointers - Pointers and arrays.	12	Text Books/ Reference Books/ NPTEL
V	Structures: Defining a structure - Declaring structure variables - Accessing structure members - Array of structures - Structure within structures -Unions. Files: Defining and opening a File - Closing a file - I/O Operations on files - Dynamic memory allocation - Command Line Arguments.	12	Text Books/ Reference Books
Total		60	

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



Text books	1.	Byron Gottfried, 2018, "Schaum's Outline of Programming with C", 4th Edition, McGraw Hill Education.
	2.	Ashok N. Kamthane, 2009, "Programming and Data Structures", 1st Edition, Pearson Education.
Reference Books	1.	E. Balagurusamy, 2017, "Programming in ANSI C", 7th Edition, TMH.
	2.	H. Schildt, 2000, "C: The Complete Reference", 4th Edition, TMH
	3.	Reema Thareja, 2015, "Programming in C", 2nd Edition, Oxford University Press.
	4.	Anita Goel, Ajay Mittal, 2016, "Computer Fundamentals and Programming in C", 1st Edition, Pearson.

Journal and Magazines	-
E-Resources and Website	https://nptel.ac.in

Learning Method	Chalk and Talk/ Assignment/Seminar/ Group Discussion/ Case Study
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester – I							
CORE II: DIGITAL LOGIC DESIGN							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25CYU1CA	DIGITAL LOGIC DESIGN	CORE	48	-	-	4

Preamble	This course has been designed for students to learn and understand <ul style="list-style-type: none"> • The fundamental digital logic concepts. • The combinational logic circuits and sequential logic circuits. • The concepts behind memory design and its memory types.
Prerequisite	A basic understanding of mathematics and logical reasoning

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Demonstrate proficiency in binary number representation, base conversions, and operations.	K2
CO2	Understanding the functionality and truth tables of basic logic gates.	K2
CO3	Analyze and optimize the combinational logic circuits.	K2
CO4	Understand the fundamental concepts of flip-flops and registers.	K2
CO5	Analyze the basic concepts of memory hierarchy and its components.	K3

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



25CYU1CA	DIGITAL LOGIC DESIGN
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Syllabus

Unit	Content	Hrs	Resources
I	Number System and Boolean Algebra Binary Numbers - Number base conversions- Octal and Hexadecimal conversions - Compliments - Binary codes - Decimal codes. Basic Definitions-Boolean functions - Canonical standard forms: Minterms and Maxterms - Sum of Minterms - Product of Maxterms - conversion between canonical forms.	10	Text Book
II	Logic Gates and Boolean functions Digital Logic Gates: AND, OR, Inverter, Buffer, NAND, NOT, Exclusive-OR, Exclusive-NOR. The Map Method-Two and three-variable Maps-Four variable Map - Five and Six-Variable Maps - Product of Sum simplification - NAND and NOR Implementation - Don't care conditions.	10	Text Book
III	Combinational Logic Adders: Half-Adder, Full-Adder. Subtractors Half-Subtractor, Full-Subtractor. Multilevel NAND Circuits: Universal Gate. Multilevel NOR Circuits: Universal Gate. Binary Parallel Adder- Decimal Adder - BCD Adder. Decoders: Demultiplexers-Encoders - Multiplexer.	10	Text Book
IV	Sequential Logic Introduction- Flip-flops-Clocked RS Flip-flop - D Flip-flop - JK Flip-flop - Design of Counters- Registers -Shift registers- Ripple Counters- Synchronous Counters- Error Correcting Codes.	10	Text Book
V	Memory Organization Memory Hierarchy- Main memory- Auxiliary memory- Associative Memory- Cache Memory- Virtual memory- Memory Management Hardware.	8	Text Book
Total		48	

Text book	1.	M. Morris Mano, 2019, "Digital Logic and Computer Design", Pearson India Education.
Reference Books	1.	M. Morris Mano, 2022, "Computer System Architecture", 3rd edition, Pearson India Education.
	2.	S. Salivahanan and S Arivazhagan, 2018, "Digital Circuits and Design", 5th Edition, Oxford University Press, Noida.
	3.	Thomas Floyd L., 2015, "Digital Fundamentals", 11th Edition, Pearson Publication Ltd, New Delhi.
	4.	David A. Patterson, John L. Hennessy, 2013, "Computer Organization and Design: The Hardware/Software Interface", Morgan Kaufmann.



Journal and Magazines	-
E-Resources and Website	https://www.youtube.com/channel/UCBkOVp1Cqz4MR0LYR8vKpZg https://www.coursera.org/learn/digital-systems

Learning Method	Chalk and Talk/ Assignment/ Role Play
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Focus of the Course	Skill Development/ Employability
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Semester – I CORE PRACTICAL -I: PROGRAMMING IN C							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25CYU1CP	PROGRAMMING IN C	CORE	-	-	48	2

Preamble	This course has been designed for students to Implement:						
	<ul style="list-style-type: none"> • Basic Structure of C Programs. • Concepts of conditional statements and looping. • Functions and Structures 						
Prerequisite	-						

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Illustrate the basic concepts in C.	K1
CO2	Demonstrate Operators	K2
CO3	Implement the concepts of conditional statements	K2
CO4	Demonstrate Arrays and functions.	K3
CO5	Illustrate structures and files.	K2

Mapping with Program Outcomes:

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



S.No

List of Programs

- 1 Develop a program to understand the concept of data types and variables.
- 2 Develop programs to familiarize the different types of operators
- 3 Implement the concept of branching statements using simple programs.
- 4 Develop programs to practice the concepts of looping statements
- 5 Implement the concepts of one- and two-dimensional arrays.
- 6 Develop a program to sort the given set of numbers using arrays
- 7 Demonstrate the operations of strings variables and functions.
- 8 Using functions demonstrate the concept of code reusability.
- 9 Implement the concept of structures.
Compute the following operations using Pointers:
- 10 i. Addition of two matrices
ii. Multiplication of two matrices.
- 11 Using File Operations display the contents of a file.
- 12 Develop a program to copy the contents of one file to another

Text Books	1.	Ashok N. Kamthane, 2009, "Programming and Data Structures", 1st Edition, Pearson Education.
	2.	Byron Gottfried, 2018, "Schaum's Outline of Programming with C", 4th Edition, McGraw Hill Education.

Learning Method	Demonstration/ Hands on Experiments
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Focus of the Course	Skill Development/ Employability
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Semester - I IDC: MATHEMATICS FOR COMPUTING - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25MTU1ID	MATHEMATICS FOR COMPUTING - I	IDC	48	12		4

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> the concepts of matrices and linear systems the technique of obtaining eigen values and eigen vectors the method of solving linear system of equations
Prerequisite	Knowledge on Basic Mathematics

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	define the various terms of matrices and the operations involved in it.	K1
CO2	Discuss the real life applications of linear systems in various fields.	K2
CO3	identify the determinant value of matrices.	K1
CO4	determine the eigen values and eigen vectors through different methods.	K3
CO5	recognize the direct and indirect methods for solving algebraic equations.	K1

Mapping with Program Outcomes:

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



25MTU1ID	MATHEMATICS FOR COMPUTING - I
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Syllabus

Unit	Content	Hrs	Resources
I	Systems of Linear Equations: Introduction to system of linear equations- - linear systems in two and three unknown - augmented matrices and elementary row operations - Gaussian elimination- Matrices and Matrix operations - inverses - algebraic properties of matrices - elementary matrices - method for finding A^{-1} - invertible matrices.	13	Text Book
II	Matrix Transformations and Applications: Diagonal matrices - triangular matrices - symmetric matrices - Matrix Transformations - Network Analysis - Electrical Circuits - Balancing Chemical Equations - Polynomial Interpolation - Leontief Input-Output Models.	12	Text Book
III	Determinants: Introduction - determinants by cofactor expansion- minors and cofactors - technique for evaluating 2×2 and 3×3 determinants - evaluating determinants by row reduction - elementary row operations - Matrices with proportional rows or columns - properties of determinants - Cramer's rule.	12	Text Book
IV	Eigenvalues and Eigenvectors: Definition of eigenvalues and eigenvectors - computing eigenvalues and eigenvectors - Diagonalization - Geometric and Algebraic multiplicity - complex vector spaces - vectors in C^n - differential equations - first order linear systems - solution by diagonalization.	10	Text Book
V	Solution of Algebraic, Transcendental Equations and Linear Systems: Introduction - Newton-Raphson method - Direct methods - Matrix inversion method - Gaussian elimination method - Gauss Jordan method - Iterative methods - Gauss Seidel Method - Gauss Jacobi method.	13	Text Book
Total		60	

Note: Distribution of marks 80% Problem and 20% Theory
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Text book	1.	Howard Anton and Chris Rorres, 2015 "Elementary Linear Algebra with Supplemental Applications", 11 th Edition, Wiley India Pvt. Ltd, New Delhi. (Unit I to IV).
	2.	Sastry S.S, 2012, " Introductory methods of Numerical Analysis", Prentice- Hall of India. New Delhi. (Unit V).
Reference Books	1.	Partha Karmakar, Chandan Bikash Das, Pabitra kumar Gouri, 2021 "Introduction to Linear Algebra", 1 st Edition, Books and Allied(P) Ltd, Kolkata.
	2.	Gilbert Strang, 2005, "Linear Algebra and its Applications", 4 th Edition, Brooks/Cole, Noida.
	3.	Veerarajan T, Ramachandran.T, 2004. "Theory and Problems in Numerical Methods with Programs in C and C++", 10 th Edition, Tata McGraw Hill Publishing Company Limited, New Delhi.
	4.	Venkataraman M.K. 2004, "Numerical Methods in Science and Engineering", 4 th Edition, NPC.

Journal and Magazines	https://www.ijream.org/papers/ICRTET0062.pdf
E-Resources and Website	Matrices: Definition, Properties, Types, Formulas, and Examples (geeksforgeeks.org) https://nptel.ac.in

Learning Method	Chalk and Talk/ Assignment/Seminar
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Focus of the Course	Skill Development
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Semester – I

AECC I: ENVIRONMENTAL STUDIES

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25MBU1AA	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	✓	✓	✓	✓	✓



25MBU1AA - ENVIRONMENTAL STUDIES
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; Indigenous knowledge used for sustainable forest use.	5	Text book and Website
V	Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Role of Information Technology in Environment and human health. Role of the Colleges, Teachers and Students in village adoption towards clean, green and make in villages in various aspects.	5	Text book and Website
	Total	24	



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

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

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

