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)

Bachelor of Science in Computer Science Degree

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

Programme:B.Sc. Computer Science

Eligibility

Candidates for admission to the first year of the **Bachelor of Science (Computer Science)** 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.

Programme Educational Objectives

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

1. To provide adequate basic understanding about Computer Science and its applications.
2. To exploit emerging technologies in Computer Science and its related discipline.
3. To expose adequate training to the computing environment in Software Development, Graphics, Data Mining etc.
4. To inculcate training & practical approach, internship is given to be trained among the students in the field of Computer Science.
5. To equip the students with sufficient exposure and skills to enable them in attaining a deserving position in Software Industry.

PROGRAMME OUTCOMES

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

PO Number	POStatement
PO1	An ability to apply knowledge of computing and mathematicsappropriate to the program's student outcomes and to the discipline.
PO2	An ability to analyze a problem, and identify and define thecomputing requirements appropriate to its solution.
PO3	An ability to apply mathematical foundations, algorithmicprinciples, and computer science theory in the modeling and design of computer-based systems in a way that demonstratescomprehension of the tradeoffs involved in design choices.
PO4	An understanding of professional, ethical, legal, security and social issues and responsibilities.
PO5	An ability to communicate effectively with a range of audiences.

B.Sc. Computer Science

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 3)	2	2 x 3 = 6	I to VI
	Core (Credits 4)	10	10 x4= 40	I to VI
	Core Practical (Credits 5)(Embedded)	2	2 x 5 = 10	III to IV
	Core Project (Credits 4)	1	1 x 4 = 4	VI
	Core Practical (Credits 2)	4	5 x 2 = 10	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/Advance Tamil/Human Rights, & Women's Rights (AECC)	1	2	II
	Generic Elective(GE)	1	1 x 2=2	V
	Innovation & IPR/ Innovation, IPR & Entrepreneurship (AECC)	1	2	VI
V (2 Credits)	NSS/NCC/YRC/RRC/Yoga/Sports	-	2	I - II
TOTAL CREDITS			**142**	

CURRICULUM
B. Sc. Computer Science

Course Code	Course Category	Course Name	L	T	P	Instruction Hours		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
First Semester												
Part– I												
24TLU1TA	Language-I	Tamil–I	4	1	-	5	60	3	25	75	100	3
24TLU1HA		Hindi-I										
24TLU1MA		Malayalam-I										
24TLU1FA		French –I										
Part– II												
24ELU1EA	Language-II	English I	4	-	1	5	60	3	25	75	100	3
Part– III												
24AIU1CA	Core - I	Problem Solving and Programming in C	4	1	-	5	60	3	25	75	100	4
24CSU1CP	Core Practical - I	C Programming	-	-	4	4	48	3	40	60	100	2
24ITU1CA	Core -II	Digital Computer Fundamentals	4	-	-	4	48	3	25	75	100	4
24MTU1IC	IDC -I	Numerical Methods and Statistics	4	1	-	5	60	3	25	75	100	4
Part-IV												
24MBU1AA	AECC-I	Environmental Studies	2	-	-	2	24	3	50	-	50	2
Part-V												
24CSU1XA	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												
24TLU2TA	Language-I	Tamil–II	4	1	-	5	60	3	25	75	100	3
24TLU2HA		Hindi-II										
24TLU2MA		Malayalam-II										
24TLU2FA		French –II										
Part– II												
24ELU2EA	Language-II	English - II	4	-	1	5	60	3	25	75	100	3
Part - III												
24CAU2CA	Core -III	Data Structures	4	1	-	5	60	3	25	75	100	4
24CSU2CA	Core -IV	Object Oriented Programming with C++	4	-	-	4	48	3	25	75	100	4
24CSU2CP	Core Practical-II	Data Structures using C++	-	-	4	4	48	3	40	60	100	2
24MTU2IC	IDC -II	Discrete Mathematics	4	1	-	5	60	3	25	75	100	4
Part-IV												
24TLU2AA	AECC-II	Basic Tamil	2	-	-	2	24	-	50	-	50	2
24TLU2AB		Advanced Tamil										
24CRU2AA		Human Rights and Women's Rights										
Part-V												
24CSU2XA	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	Theory		CIA	ESE	Total	
Third Semester												
Part – I												
24TLU3TA	Language-I	Tamil -III	3	1	-	4	48	3	25	75	100	3
24TLU3HA		Hindi-III										
24TLU3MA		Malayalam-III										
24TLU3FA		French –III										
Part – II												
24ELU3EA	Language-II	English - III	3	1	-	4	48	3	25	75	100	3
Part – III												
24CAU3CA	Core - V	Database Management Systems	4	-	-	4	48	3	25	75	100	4
24CTU3CM	Core Practical - III	Java Programming	3	-	4	7	84	3	40	60	100	5
24CSU3CA	Core -VI	Operating Systems	3	-	-	3	36	3	25	75	100	3
24CSU3SP	SEC Practical-I	SQL Programming	-	-	4	4	48	3	40	60	100	2
24CRU3IA	IDC -III	Cyber law	4	-	-	4	48	3	25	75	100	4
Total			**22**	**-**	**08**	**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										
24TLU4MA		Malayalam-IV										
24TLU4FA		French –IV										
Part – II												
24ELU4EA	Language-II	English -IV	3	1	-	4	48	3	25	75	100	3
Part – III												
24CTU4CA	Core -VII	Computer Networks	4	-	-	4	48	3	25	75	100	4
24CSU4CM	Core Practical - IV	Python Programming	3	-	4	7	84	3	40	60	100	5
24CSU4CB	Core VIII	Theory of Computation	3	-	-	3	36	3	25	75	100	3
24CSU4SP	SEC Practical-II	Linux	-	-	4	4	48	3	40	60	100	2
24MTU4IC	IDC -IV	Operations Research	4	-	-	4	48	3	25	75	100	4
Total			**20**	**2**	**08**	**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												
24CSU5CA	Core - IX	PHP & MySQL	4	-	-	4	48	3	25	75	100	4
24ITU5CB	Core -X	Cyber Security Ethics	4	-	-	4	48	3	25	75	100	4
24CSU5CC	Core -XI	Software Engineering Practices	4	-	-	4	48	3	25	75	100	4
24CSU5CP	Core Practical -V	PHP & MySQL	-	-	4	4	48	3	40	60	100	2
24CSU5CQ	Core Practical -VI	Multimedia	-	-	4	4	48	3	40	60	100	2
24CSU5SP	SEC Practical-III	Android Programming	-	-	4	4	48	3	40	60	100	2
24CSU5DA	DSE –I	Foundations of Artificial Intelligence	4	-	-	4	48	3	25	75	100	4
24CSU5DB		Data Mining and Data Warehousing										
24CSU5DC		Internet of Things										
24CSU5TA	IT	Industrial Training	-	-	-	-	-	3	40	60	100	2
Part–IV												
	GE		2	-	-	2	24	-	50	-	50	2
Total			**18**	**-**	**12**	**30**	**360**	**-**	**-**	**-**	**850**	**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												
24CSU6CA	Core -XII	Data Visualization	4	-	-	4	48	3	25	75	100	4
24CSU6CP	Core Practical VII	Data Visualization	-	-	4	4	48	3	40	60	100	2
24CSU6SP	SEC Practical - IV	R Programming	-	-	4	4	48	3	40	60	100	2
24CSU6CV	Core –XIII	Project	-	-	8	8	96	3	40	60	100	4
24CSU6DA	DSE –II	Machine Learning	4	-	-	4	48	3	25	75	100	4
24CSU6DB		Big Data Technologies										
24CSU6DC		Cloud Computing Fundamentals										
24CSU6DD	DSE –III	Decision Support Systems	4	-	-	4	48	3	25	75	100	4
24CSU6DE		Augmented Reality										
24CSU6DF		Fundamentals of Block Chain Technologies										
Part - IV												
24BCU6AA	AECC-III	Innovation, IPR and Entrepreneurship	2	-	-	2	24	-	50	-	50	2
Total			**14**	**-**	**16**	**30**	**360**	**-**	**-**	**-**	**650**	**22**
***Grand total**											**4300**	**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.	24CSU5DA	Foundations of Artificial Intelligence
2.	24CSU5DB	Data Mining and Data Warehousing
3.	24CSU5DC	Internet ofThings

Semester VI (Elective II)
List of Elective Courses

S. No.	Course Code	Name of the Course
1.	24CSU6DA	Machine Learning
2.	24CSU6DB	Big Data Technologies
3.	24CSU6DC	CloudComputing Fundamentals

Semester VI (Elective III)
List of Elective Courses

S. No.	Course Code	Name of the Course
1.	24CSU6DD	Decision Support Systems
2.	24CSU6DE	Augmented Reality
3.	24CSU6DF	Fundamentals of BlockChainTechnologies

GENERIC ELECTIVE COURSE (GE)

The following is the course offered under Generic Elective Course

Semester V (GE)

S. No.	Course Code	Name of the Course
1.	24CSU5GA	Social Media Engagement

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	24CSUSSA	Social Media Analytics
2	24CSUSSB	E-Commerce

CERTIFICATE PROGRAMMES

The following are the programme offered to earn extra credits:

S. No.	Programme Code and Name	Course Code	Name of the Course
1.	4CS6A Diploma in Web designing	24CSU1CA	Fundamentals of Web Designing
2.		24CSU1CP	Fundamentals of Web Designing – Lab
3.		24CSU1CB	Web Design & Development
4.		24CSU1CC	Web Design & Development- Lab

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

Dr.N.G.P. Arts and Science College
APPROVED
BoS- 17th 01.04.24 | AC - 17th 17.04.24 | GB -

Academic Council
CHAIRMAN
Dr.N.G.P. Arts and Science College

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

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

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

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

Syllabus:

Unit	Content	Hrs	Resources
1	**மறுமலர்ச்சிக் கவிதைகள்** 1. இலக்கிய வரலாறு -மறுமலர்ச்சிக் கவிஞர்களின்தமிழ்ப்பணிகள் 2. பாரததேசம்- பாரதியார் 3. படி - பாரதிதாசன் 4. தமிழரின் பெருமை- நாமக்கல்கவிஞர் 5. தமிழ்க் கொலை புரியாதீர்- புலவர் குழந்தை 6. **திரைத்தமிழ்** அ) 'விஞ்ஞானத்த வளர்க்கப் போறண்டி' எனத்தொடங்கும் பாடல் - உடுமலை நாராயண கவி ஆ) 'சும்மா கிடந்த நிலத்தை' எனத்தொடங்கும் பாடல் - பட்டுக்கோட்டை கல்யாண சுந்தரனார் இ) 'சமரசம் உலாவும் இடமே' எனத்தொடங்கும் பாடல் - மருதகாசி ஈ) 'உன்னை அறிந்தால்' எனத்தொடங்கும் பாடல்-கண்ணதாசன்	13	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=Up55uhkk9zI
2	**புதுக்கவிதைகள்** 1. இலக்கிய வரலாறு- புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 2. கடமையைச் செய்- மீரா 3. ஓடு ஓடு சங்கிலி - சிற்பி பாலசுப்பிரமணியம் 4. ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான் 5. மரங்கள் - மு.மேத்தா 6. கரிக்கிறது தாய்ப்பால்- ஆரூர் தமிழ்நாடன் 7. ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார் 8. ஹைகூ கவிதைகள் - 10 கவிதைகள்	13	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=dX9ZaNJMaco
3	**பெண்ணியம்** 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 https://www.youtube.com/watch?v=DLabokqWEdg
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 https://www.youtube.com/watch?v=78u7iTN3OU8

5	**பயிற்சிப் பகுதி** **அ. இலக்கணம்** 1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கிஎழுதுதல் 2. ர,ற-ல,ழ,ள - ண,ந,னவேறுபாடு - ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல் **ஆ. படைப்பாக்கம்** 1. கவிதை- எழுதுதல் (15 வரிகள் முதல் 30 வரிகள் வரை) 2.சிறுகதை - எழுதுதல் (குறைந்தது 3 பக்கங்கள்)	10	தமிழ்மொழிப்பாடம் முதற்பருவம் 2024-2025 https://www.youtube.com/watch?v=B3wfM0QL6N8 https://www.youtube.com/watch?v=FchTlqAtwBU https://www.youtube.com/watch?v=gCP3gC-JQU4 https://www.youtube.com/watch?v=p9QOHD12Yeo
	Total	60	

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

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

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment

Focus of the Course	Skill Development / Employability

Semester – I HINDI – I							
Semester	**Course Code**	**Course Name**	**Category**	**L**	**T**	**P**	**Credits**
I	24TLU1HA	HINDI – I	LANGUAGE- I	48	12	-	3

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

Course Outcomes (Cos)		
CO. No.	**Course Outcomes (COs) Statement**	**Bloom's 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- मक्रीलपाठ3- बहतापानीनिर्मला पाठ4- राष्ट्रपितामहात्मागाँधी	13	Text Book
2	कहानीकुंज- डॉवी.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 लीलाअपार्ट्मेंट्स, 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 चेनैई -17
Reference Books		-

Journal and Magazines	-
E-Resources and Website	-

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment

Focus of the Course	Skill Development / Employability

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 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	Apply creative ability	K3
CO5	Build the power of creative reading	K4

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

Syllabus:

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

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

Journal and Magazines	-
E-Resources and Website	-

Learning Method	Lecture/ Tutorial / Student Seminar/GD/Assignment

Focus of the Course	Skill Development / Employability

Semester – I FRENCH - I							
Semester	**Course Code**	**Course Name**	**Category**	**L**	**T**	**P**	**Credits**
I	24TLU1FA	FRENCH - I	LANGUAGE- I	48	12	-	3

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

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

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

Syllabus:

Unit	Content			Hrs	Resources
1	**Objectifs de Communication**	**Tâche**	**Activités de réception et de production orale**	14	Text book Salut I Page 10
	• Saluer • Enter en contact • avec quelqu'un. • Se presenter. • S'excuser	En cours de cuisine, premiers contacts avec les members d'un groupe	• Comprendre des personnes qui se saluent. • Ēchanger pour entrer en contact, se présenter, saluer, s'excuser. • Communiquer avec *tu* ou *vous*. • Comprendre les consignes de classe • Ēpeler son nom et son prénom. Computer jusqu'à 10		
2	• Demander de se presenter. • Présenter quelqu'un	Dans la classe de français, se presenter et remplir une fiche pour le professeur.	• Comprendre les informations essentielles dans un échange en milieu professionnel. Ēchanger pour se presenteret présenterquelqu'un	12	Text book Enchanté I Page 20
3	• Exprimers es gouts.	Dans un café, participer à une soirée de rencontres rapides et remplir de taches d'appréciation	• Dans une soirée de recontresrapid comprendre des personnes qui échangent sur elles et sur leurs goût • Comprendre une personne qui parler 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 passes. Tu veux bien?	Organiser un programme d'activités pour accueillir une personne importante	Comprendre une personne demande un service à quelqu'un. Demanderà quelqu'un de faire quelque chose. • 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

Focus of the Course	Skill Development / Employability

Semester – I

ENGLISH – I

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

Preamble	This course has been designed for students to learn and understand • 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'sTaxonomy 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	**Genre Studies** Mathew Arnold: Dover Beach- Author's Biography- title indications- outline- paraphrasing the poem- context of poem- form- poetic devices- enjambment- techniques– Annotations NiyiOsundare: 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	12	britishcouncil.org cambridgeenglish.org

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

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

Journal and Magazines	https://academic.oup.com/journals
E-Resources and Website	https://learnenglish.britishcouncil.org/ https://www.cambridgeenglish.org/learning-english/activities-for-learners/

Learning Method	Chalk and Talk/Assignment/Seminar/ Interactive session

Focus of the Course	Skill Development/Employability

SEMESTER - I
CORE - I: PROBLEM SOLVING AND PROGRAMMING IN C

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24AIU1CA	PROBLEM SOLVING AND PROGRAMMING IN C	CORE	48	12	-	4

Preamble	This course has been designed for students to learn and understand • 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	✓	✓		✓	✓

Syllabus

Unit	Content	Hours	E-Contents / 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 Book/ Reference Book/ 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 Book/ Reference Book
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 Book/ Reference Book
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 Book/ Reference Book/ 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 Book/ Reference Book
	Total	**60**	

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.
	1.	E. Balagurusamy, 2017, "Programming in ANSI C", 7thEdition, TMH.
	2.	H. Schildt, 2000,"C: The Complete Reference", 4th Edition, TMH

Reference Books	**3.**	ReemaThareja , 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 Methods	Lecture, Demonstration, Online Compilers, Coding Platforms

Focus of the Course	Skill Development/Employability

Semester - I
Core Practical I: C PROGRAMMING

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24CSU1CP	C PROGRAMMING	Core	48	-	-	2

S.No	Contents
1	Develop a Program to solve simple computational problems using arithmetic expressions.
2	Develop a program to compute the roots of a quadratic equation by accepting the coefficients. Print the appropriate messages
3	Implement using Looping to check whether the given number is prime and display appropriate messages
4	Write functions to implement string operations such as compare, concatenate, string length.
5	Implement Recursive functions for Binary to Decimal Conversion.
6	Develop a program to sort the given set of numbers
7	Compute the average of n numbers using arrays
8	Implement structure to read, write and compute average marks and display the number of students score above and below average marks in a class of N students.
9	Compute the following operations Using Pointers: i. Addition of two matrices ii. Multiplication of two matrices
10	Compute the command line operations and display it
11	Using File Operations display the contents of a file.
12	Develop a program to copy the contents of one file to another

Note: Any 10 Experiments are Mandatory

Semester - I

Core: DIGITAL COMPUTER FUNDAMENTALS

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24ITU1CA	DIGITAL COMPUTER FUNDAMENTALS	Core	48	-	-	4

Preamble	This course has been designed for students to learn and understand • the concepts of number system and circuits • the principles of logic gates and memory • the design and architecture of microprocessors and microcontrollers
Prerequisite	Knowledge on basic digital system

Course Outcomes (COs)

CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the types of number systems, Boolean Algebra	K2
CO2	Understand and analyze Logic gates	K2
CO3	Illustrate the concepts of combinational circuits	K3
CO4	Understand the different types of sequential logic and memory organization	K2
CO5	Understand the architecture of microprocessors and microcontrollers	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	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 Minterms-conversion between canonical forms.	10	Text Book - 1
II	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 - Don't care conditions.	08	Text Book - 1
III	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 - 1
IV	Introduction- Flip-flops-Clocked RS Flip-flop - D Flip-flop - JK Flip-flop - Design of Counters- Registers -Ripple Counters. The Memory Unit - Random Access Memories: Integrated-circuit Memory- Magnetic-core Memory.	10	Text Book – 1 & NPTEL
V	Introduction – Microprocessor- Microcomputer- Architecture of Microprocessors- History- Evolution- Microprocessor Applications- Evolution of Microcontrollers- Application of Microcontrollers. Architecture of 8085 Microprocessor- Pin diagram of 8085 Microprocessor.	10	Text Book- 2 & You Tube Videos
	Total	**48**	

Text Books	**1.**	M.Morris Mano, 2019,"Digital Logic and Computer Design",Pearson India Education.
	2.	Soumitra Kumar Mandal, 2018, "Microprocessors and Microcontrollers – Architecture, Programming and Interfacing using 8085, 8086, 8051", 15th Edition, Tata Mc Graw Hill Education.
Reference Books	**1.**	S. Salivahanan and S Arivazhagan, 2018,"Digital Circuits and Design", 5th Edition, Oxford University Press, Noida
	2.	Thomas Floyd L., 2015, "Digital Fundamentals", 11th Edition, Pearson Publication Ltd, New Delhi
	3.	M Morris Mano, 2016,"Digital Logic and Computer Design", 5th edition, Pearson
	4.	Aditya P Mathur, 2016 ,"Introduction to Microprocessor", 3rd Edition, McGraw Hill Education.

Journal and Magazines	International Journal of Computing and Digital System- https://journal.uob.edu.bh/handle/123456789/12?id=about https://www.pcmag.com/
E-Resources and Website	https://nptel.ac.in https://www.coursera.org/learn/digital-systems/ https://www.nesoacademy.org/ec/05-digital-electronics

Learning Methods	Lecture/Simulation/Demo/Mind Mapping

Focus of the Course	Skill Development/Employability

Semester - I
IDC1: NUMERICAL METHODS AND STATISTICS

Semester	Course Code	Course Name	Category	L	T	P	Credits
I	24MTU1IC	NUMERICAL METHODS AND STATISTICS	IDC	48	12	-	4

Preamble	This course has been designed for students to learn and understand • the method of solving linear system of equations • the relation between two attributes and measure their efficiency • the method of checking the validity of parameters through test statistic
Prerequisite	Knowledge on Basic Mathematics

Course Outcomes (COs)

CO Number	Course Outcomes (COs) Statement	Bloom'sTaxonomy Knowledge Level
CO1	recognize the direct and indirect methods for solving algebraic equations	K1
CO2	discuss the method of solving differential and integral problems	K2
CO3	define the parameters of central tendencies and dispersion.	K1
CO4	demonstrate the applications of correlation and regression	K2
CO5	analyze the validity of the values of parameters through hypothesis testing.	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	**Solution of Algebraic, Transcendental and Linear systems of Equations:** 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
II	**Interpolation, Numerical Differentiation and Integration:** Introduction - Finite difference - Newton's formula for forward and backward interpolation – Interpolation with unevenly spaced points: Lagrange's interpolation- Numerical differentiation - maximum and minimum values of a tabulated Function - Numerical integration - Trapezoidal rule - Simpson's 1/3 Rule - Simpson's 3/8 Rule.	12	Text Book&Reference Book
III	**Classification, Measures of Central tendency and Dispersion:** Frequency distribution - Characteristics of a good measure of central tendency - Mean - Arithmetic Mean - pooled mean - Geometric Mean - Harmonic Mean -Median - Mode. Measures of Dispersion - purposes - properties -Range - Inter quartile range –Mean deviation - Variance - Standard Deviation - coefficient of variation.	13	Text Book
IV	**Correlation and Regression:** Scatter diagram - Least square method of fitting a regression line - properties - regression line of X on Y- Correlation methods - determination of correlation by graphical method - Correlation Coefficient - Correlation in grouped bivariate data - relationship between correlation coefficients and regression coefficient - Rank correlation.	11	Text Book&NPTEL
V	**Test of Significance and Chi-square Test:** Test of hypothesis for population variance -two types of error - level of significance - critical region - one and two tailed test - size and power of a test -randomized test - non-randomized test - degrees of freedom - student's t-test - test of equality of two population means - paired t- test Chi-square Test: test of hypothesis for population variance - test of goodness of fit - test in one way classification - Contingency table - Test of independence of factors - Yate's correction.	11	Text Book&You Tube Videos
	Total	60	

Note: 20% Theory and 80% Problem

Text Book	**1.**	Sastry S.S., 2012, "Introductory methods of Numerical Analysis", Prentice-Hall of India, New Delhi (Unit I to II)
	2.	Agarwal B L, 2013, Basic Statistics, New age International (P) Limited publishers, New Delhi. (Unit III to V).
Reference Books	**1.**	Gupta C.B. and Vijay Gupta, 2007,"Introduction to Statistical Methods", S.Chand& Co, New Delhi
	2.	Sanchetti D.C. Kapoor, V.K. 2010. Statistic, S.Chand& Co, New Delhi
	3.	Venkataraman M K, 2004,"Numerical Methods in Science and Engineering", 4th Edition, NPC.
	4.	Veerarajan T, Ramachandran T, 2004, "Theory and Problems in Numerical Methods With Programs in C and C++", 10th Edition, Tata Mc- Graw Hill Publishing Company Limited, New Delhi .

Journal and Magazines	https://www.worldscientific.com/worldscinet/bms
E-Resourcesand Website	https://nptel.ac.in

Learning Method	Chalk and Talk/Assignment/Seminar

Focus of the Course	Skill Development/Employability

Semester – I

AECC I: ENVIRONMENTAL STUDIES

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

Preamble	This course has been designed for students to learn and understand • Multi-disciplinary aspects of Environmental studies • Importance to conserve the biodiversity • Causes of Pollution and its control
Prerequisite	Aware the basics of environmental components

Course Outcomes (Cos)

CO Number	Course Outcomes (Cos) Statement	Bloom's Taxonomy Knowledge Level
CO1	To understand the importance of natural resources in order to conserve for the future	K1
CO2	To impart knowledge on Natural resources and its conservation	K2
CO3	To impart knowledge on Biodiversity and its conservation	K3
CO4	To create awareness on effects, causes and control of air, water, soil and noise pollution etc.,	K4
CO5	To build awareness about sustainable development and Environmental protection	K1

Mapping with Programme Outcomes

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

Syllabus

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

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

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

Learning Methods	Chalk and Talk/ Seminar/ Assignment

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

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APPROVED
BoS- 17th 01.04.24 | AC - 17th 17.04.24 | GB -

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