

## 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 (3<sup>rd</sup> Cycle-3.64 CGPA)  
Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India  
Web: [www.drngpasc.ac.in](http://www.drngpasc.ac.in) | Email: [info@drngpasc.ac.in](mailto:info@drngpasc.ac.in) | Phone: +91-422-2369100

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

#### Bachelor of Science in Information Technology Degree

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

#### Programme: B. Sc (Information Technology)

##### Eligibility

Candidates for admission to the first year of the Bachelor of Science (Information Technology) 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 there to 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. Demonstrating a substantial understanding of concepts in key areas of Information Technology and its applications.
2. Analysis and synthesis involved in Computer System, Information System and Computer applications.
3. To develop a software and in its design and implementation for professional competence
4. To equip and train the students to meet the requirement of the IT Industries and Public Sectors.
5. To stimulate an interest in computing as an academic discipline with a view to encouraging progression to research and higher studies.



## PROGRAMME OUTCOMES

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

PO Number	PO Statement
PO1	Understand the fundamental concept of Information Technology
PO2	Gain knowledge on programming language to constructs application and packages
PO3	Improve programming knowledge to solve real-world problems using Information Technology
PO4	Develop necessary skills to design digital system
PO5	Enhance problem solving, analytical, communication, team work and potential to develop software and network management



**B. Sc. INFORMATION TECHNOLOGY**  
**(For the students admitted during the Academic Year 2025-2026)**

*Credit Distributions*

Part	Subjects	No. of Papers	Credit	Semester No.
<b>I</b> (12 Credits)	Tamil / Hindi / French/Malayalam	4	4 x 3 = 12	I to IV
<b>II</b> (12 Credits)	English	4	4 x 3 = 12	I to IV
<b>III</b> (108 Credits)	Core (4 credits)	11	11x4=44	I to VI
	Core (3 credits)	2	2x3=6	I to VI
	Core Practical (5 credits)	2	2x5=10	III to IV
	Core Practical (2 credits)	3	3x2=6	I to VI
	Core Project (4 credits)	1	1x4=4	VI
	Inter Departmental Course (IDC)	4	4x4=16	I to IV
	Discipline Specific Elective (DSE)	3	3 x 4 =12	V & VI
	Skill Enhancement Course (SEC)	4	4x2 =8	III to VI
	Industrial Training	1	1x2=2	V
<b>IV</b> (8 Credits)	Environmental Studies (AECC)	1	1x2=2	I
	Basic Tamil/Advanced Tamil/Human Rights, & Women's Rights (AECC)	1	1x2=2	II
	Generic Elective (GE)	1	1x 2=2	V
	Innovation & IPR/ Innovation, IPR & Entrepreneurship (AECC)	1	2	VI
<b>V</b> (2 Credits)	NSS/NCC/YRC/RRC/Yoga/ Sports/Clubs/ Health and Wellness	-	2	I - II
<b>TOTAL CREDITS</b>			<b>142</b>	



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**CURRICULUM**  
**B. Sc. INFORMATION TECHNOLOGY**

Course Code	Course Category	Course Name	L	T	P	Duration (h)		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
25ITU1CP	Core Practical-I	C Programming	-	-	4	4	48	3	40	60	100	2
25ITU1CA	Core-II	Digital Computer Fundamentals	4	-	-	4	48	3	25	75	100	4
25MTU1IC	IDC-I	Numerical Methods and Statistics	4	1	-	5	60	3	25	75	100	4
Part-IV												
25MBU1AA	AECC-I	Environmental Studies	2	-	-	2	24	-	50	-	50	2
Part-V												
25ITU1XA	Extension Activity	NSS/NCC/YRC /RRC/Yoga /Sports/Clubs	-	-	-	-	-	-	50	-	50	1
Total			22	3	5	30	360	-	-	-	700	23



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Course Code	Course Category	Course Name	L	T	P	Duration (h)		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
25ITU2CP	Core Practical-II	Data Structures and C++	-	-	4	4	48	3	40	60	100	2
25MTU2IC	IDC-II	Discrete Mathematics	4	1	-	5	60	3	25	75	100	4
Part-IV												
25TLU2AA	AECC-II	Basic Tamil	2	-	-	2	24	3	50	-	50	2
25TLU2AB		Advanced Tamil				2	24					
25CRU2AA		Human Rights and Women's Rights				2	24					
Part-V												
25ITU2XA	Extension Activity	NSS/ NCC/ YRC/ RRC/ Yoga/Sports/ Clubs/Health and Wellness	-	-	-	-	-	-	50	-	50	1
Total			22	3	5	30	360	-	-	-	700	23



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Course Code	Course Category	Course Name	L	T	P	Duration (h)		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												
25CAU3CA	Core -V	Database Management Systems	4	-	-	4	48	3	25	75	100	4
25CSU3CA	Core -VI	Operating Systems	3	-	-	3	36	3	25	75	100	3
25CTU3CM	Core Practical-III	Java Programming	3	-	4	7	84	3	40	60	100	5
25ITU3SP	SEC-I	SQL and PL/SQL	-	-	4	4	48	3	40	60	100	2
25ATU3IA	IDC-III	Business Accounting	4	-	-	4	48	3	25	75	100	4
Total			20	2	8	30	360	-	-	-	700	24



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Course Code	Course Category	Course Name	L	T	P	Duration (h)		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												
25CTU4CA	Core-VII	Computer Networks	4	-	-	4	48	3	25	75	100	4
25ITU4CA	Core-VIII	Software Engineering	3	-	-	3	36	3	25	75	100	3
25CAU4CM	Core Practical-IV	Python Programming	3	-	4	7	84	3	40	60	100	5
25ITU4SP	SEC-II	PHP Programming	-	-	4	4	48	3	40	60	100	2
25COU4IC	IDC-IV	Human Resource Management	4	-	-	4	48	3	25	75	100	4
Total			20	2	8	30	360	-	-	-	700	24



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Course Code	Course Category	Course Name	L	T	P	Duration (h)		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Fifth Semester												
Part-III												
25ITU5CA	Core-IX	Full Stack Development	4	1	-	5	60	3	25	75	100	4
25ITU5CB	Core-X	Cyber Security and Ethics	4	1	-	5	60	3	25	75	100	4
25ITU5CC	Core-XI	Cloud Computing	4	1	-	5	60	3	25	75	100	4
25ITU5CP	Core Practical-III	Full Stack Development	-	-	4	4	48	3	40	60	100	2
25ITU5SP	SEC-III	Mobile Application Development	-	-	4	4	48	3	40	60	100	2
25ITU5DA	DSE-I	Mobile Computing	4	1	-	5	60	3	25	75	100	4
25ITU5DB		Principles of Data Mining and Data Warehousing				5	60					
25ITU5DC		Software Quality Assurance				5	60					
25ITU5TA	IT	Industrial Training	-	-	-	-	-	3	40	60	100	2
Part-III												
	GE		2	-	-	2	24	-	50	-	50	2
Total			18	4	8	30	360	-	-	-	750	24



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Course Code	Course Category	Course Name	L	T	P	Duration(h)		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Sixth Semester												
Part-III												
25ITU6CA	Core-XII	Internet of Things	4	-	-	4	48	3	25	75	100	4
25ITU6CB	Core-XIII	Big Data Analytics	4	-	-	4	48	3	25	75	100	4
25ITU6SP	SEC-IV	Data Analysis with R	-	-	4	4	48	3	40	60	100	2
25ITU6CV	Core Project-XIV	Project and Viva-voce	-	-	8	8	96	3	40	60	100	4
25ITU6DA	DSE-II	Blockchain Technology and Applications				4	48	3	25	75	100	4
25ITU6DB		Artificial Intelligence and Machine Learning	4	-	-	4	48					
25ITU6DC		Software Project Management				4	48					
25ITU6DD	DSE-III	Augmented Reality and Virtual Reality				4	48	3	25	75	100	4
25ITU6DE		Deep Learning				4	48					
25ITU6DF		DevOps	4	-	-	4	48					
Part-IV												
25BCU6AA	AECC-III	Innovation, IPR & Entrepreneurship	2	-	-	2	24	-	50	-	50	2
Total			18	-	12	30	360	-	-	-	650	24
*Grand total											4200	142

\*Total Credit Should not exceed 142 credits



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## DISCIPLINE SPECIFIC ELECTIVE

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

### Semester V (Elective I)

#### List of Elective Courses

S.No.	Course Code	Name of the Course
1	25ITU5DA	Mobile Computing
2	25ITU5DB	Principles of Data Mining and Data Warehousing
3	25ITU5DC	Software Quality Assurance

### Semester VI (Elective II)

#### List of Elective Courses

S. No.	Course Code	Name of the Course
1	25ITU6DA	Blockchain Technology and Applications
2	25ITU6DB	Artificial Intelligence and Machine Learning
3	25ITU6DC	Software Project Management

### Semester VI (Elective III)

#### List of Elective Courses

S.No.	Course Code	Name of the Course
1	25ITU6DD	Augmented Reality and Virtual Reality
2	25ITU6DE	Deep Learning
3	25ITU6DF	DevOps



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## GENERIC ELECTIVE COURSES (GE)

The following are the courses offered under Generic Elective Course

### Semester V(GE)

S.No.	Course Code	Course Name
1	25ITU5GA	Business Information Systems

## 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	25ITUSSA	Human Computer Interaction Design
2	25ITUSSB	Network Protocols



BoS Chairman/HOD  
Department of Information Technology  
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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><b>மறுமலர்ச்சிக் கவிதைகள்</b></p> <ol style="list-style-type: none"> <li>இலக்கிய வரலாறு - மறுமலர்ச்சிக் கவிஞர்களின் தமிழ்ப்பணிகள்</li> <li>பாரததேசம்- பாரதியார்</li> <li>படி - பாரதிதாசன்</li> <li>தமிழரின் பெருமை- நாமக்கல் கவிஞர்</li> <li>தமிழ்க் கொலை புரியாதீர் - புலவர் குழந்தை</li> <li>திரைத்தமிழ்</li> </ol> <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 <a href="https://www.youtube.com/watch?v=Up55uhkk9z">https://www.youtube.com/watch?v=Up55uhkk9z</a> !</p>
2	<p><b>புதுக்கவிதைகள்</b></p> <ol style="list-style-type: none"> <li>இலக்கிய வரலாறு - புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்</li> <li>கடமையைச் செய் - மீரா</li> <li>ஓடு ஓடு சங்கிலி - சிற்பி பாலசுப்பிரமணியம்</li> <li>ஒப்பிலாத சமுதாயம் - அப்துல் ரகுமான்</li> <li>மரங்கள் - மு.மேத்தா</li> <li>கறிக்கிறது தாய்ப்பால் - ஆரூர் தமிழ்நாடன்</li> <li>ஐந்தாம் வகுப்பு 'அ' பிரிவு - நா. முத்துக்குமார்</li> <li>ஹைகூ கவிதைகள் - 10 கவிதைகள்</li> </ol>	13	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 <a href="https://www.youtube.com/watch?v=dX9ZaNJMa">https://www.youtube.com/watch?v=dX9ZaNJMa</a> co</p>
3	<p><b>பெண்ணியம்</b></p> <ol style="list-style-type: none"> <li>தொலைந்து போனேன் - தாமரை</li> <li>நீரில் அலையும் முகம் - அ. வெண்ணிலா</li> <li>தற்காத்தல் - பொன்மணி வைரமுத்து</li> <li>ஏனிந்த வித்தியாசங்கள்? - மல்லிகா</li> <li>புதையுண்ட வாழ்க்கை - சுசந்தி சுப்ரமணியன்</li> </ol>	10	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 <a href="https://www.youtube.com/watch?v=DLabokqWE">https://www.youtube.com/watch?v=DLabokqWE</a> dg</p>
4	<p><b>சிறுகதைகள்</b></p> <ol style="list-style-type: none"> <li>இலக்கிய வரலாறு - சிறுகதையின் தோற்றமும் வளர்ச்சியும்</li> <li>கனகாம்பரம் - கு.ப.ராஜகோபாலன்</li> <li>கடிதம்- புதுமைப்பித்தன்</li> <li>பொம்மை - ஜெயகாந்தன்</li> <li>காய்ச்சமரம் - கி. ராஜநாராயணன்</li> <li>காட்டில் ஒருமான் - அம்பை</li> <li>வேட்கை - சூர்யகாந்தன்</li> </ol>	14	<p>தமிழ்மொழிப்பாடம் முதற்பருவம் 2025-2026 <a href="https://www.youtube.com/watch?v=78u7iTN30">https://www.youtube.com/watch?v=78u7iTN30</a> U8</p>





5	<p><b>பயிற்சிப் பகுதி</b>  <b>அ. இலக்கணம்</b>            1. வல்லின ஒற்று மிகும், மிகா இடங்கள் - ஒற்றுப்பிழை நீக்கிஎழுதுதல்            2. ர,ற-ல,ழ,ள - ண,ந,ன வேறுபாடு - ஒலிப்பு நெறி, சொற்பொருள் வேறுபாடு அறிதல்  <b>ஆ. படைப்பாக்கம்</b>            1. கவிதை- எழுதுதல் (15 வரிகள் முதல் 30 வரிகள் வரை)            2. சிறுகதை - எழுதுதல் (குறைந்தது 3 பக்கங்கள்)</p>	10	<p>தமிழ்மொழிப்பாடம்            முதற்பருவம்            2025-2026  <a href="https://www.youtube.com/watch?v=B3wfm0QL6N8">https://www.youtube.com/watch?v=B3wfm0QL6N8</a>  <a href="https://www.youtube.com/watch?v=FchTlqAtwBU">https://www.youtube.com/watch?v=FchTlqAtwBU</a>  <a href="https://www.youtube.com/watch?v=gCP3gC-JQU4">https://www.youtube.com/watch?v=gCP3gC-JQU4</a>  <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 - 2025-2026 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 – I							
LANGUAGE –I: HINDI – I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1HA	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 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
Focus of the Course	Skill Development / Employability





Semester – I							
MALAYALAM- I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1MA	MALAYALAM- I	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	✓			✓	✓



25TLU1MA

MALAYALAM- I

**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
	<b>Total</b>	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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Semester – I							
FRENCH - I							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25TLU1FA	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	✓			✓	✓





25TLU1FA

FRENCH - I

## 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> <li>• .</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	

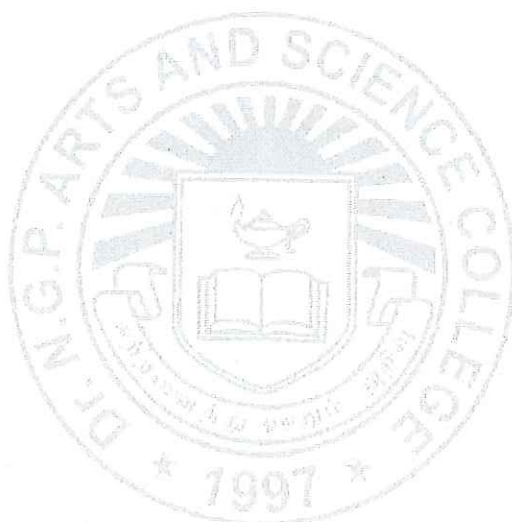


<b>Text book</b>	1.	Regine Merieux, Yves Loiseau. 2012. LATITUDES – 1: Méthode de français (Page No: 9-55) Les Editions Dider, Paris, Imprimee en Roumanie par Canale en Janvier
<b>Reference Book</b>	1.	-

<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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<b>SEMESTER – I</b> <b>LANGUAGE II: ENGLISH – I</b>							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25ELU1EA	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	✓		✓		✓





## 25ELU1EA LANGUAGE II: ENGLISH – I

## Syllabus

Unit	Content	Hrs	Resources
I	<b>Genre Studies</b> <b>Mathew Arnold: Dover Beach</b> - Author's Biography- title indications- outline- paraphrasing the poem- context of poem- form- poetic devices- enjambment- techniques- Annotations <b>Niyi Osundare: Our Earth Will Not Die</b> - Author's Biography- title indications- outline- paraphrasing the poem- context of poem- form- poetic devices- enjambment- techniques- Annotations <b>Charles Lamb: Christ's Hospital Five and Thirty Years Ago</b> - Author's biography- Narrative structure- Exploration of the text- passage analysis- insight of ideas- cohesion and context- style- language techniques- Annotation <b>James Hanson: A Famed Life - Ten Minute Comedy for Two Women</b> - Author's Biography- Plot Summary- Detailed summary and Analysis- Themes- Important Quotations- Characters- Description - analysis- Terms- Symbols- Critical analysis <b>Sheila Nayampalli Baruna: Alone</b> - Author's Biography- narrative structure- passage analysis- insight of ideas- cohesion and context- style- language techniques.	12	Text Book
II	<b>Listening Skills</b> 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	<a href="http://britishcouncil.org">britishcouncil.org</a> <a href="http://cambridgeenglish.org">cambridgeenglish.org</a>
III	<b>Speaking Skills</b> 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	<a href="http://britishcouncil.org">britishcouncil.org</a> <a href="http://cambridgeenglish.org">cambridgeenglish.org</a>
IV	<b>Reading Skills</b> 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 – Interpretation	12	<a href="http://britishcouncil.org">britishcouncil.org</a> <a href="http://cambridgeenglish.org">cambridgeenglish.org</a>
V	<b>Writing Skills</b> 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	<a href="http://britishcouncil.org">britishcouncil.org</a> <a href="http://cambridgeenglish.org">cambridgeenglish.org</a>
<b>Total</b>		<b>60</b>	
Note: Case studies related to the above topics to be discussed (Examined Internal only)			



<b>Text book</b>	1.	<a href="https://www.poetryfoundation.org/poems/43588/doverbeach">https://www.poetryfoundation.org/poems/43588/doverbeach</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/wpcontent/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf">https://offthewallplays.com/wpcontent/uploads/2017/04/1_pdfsam_A-famed-life-full-with-title-page.pdf</a>
	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 <sup>st</sup> Edn.) McGraw - Hill Education, Chennai, India.
<b>Reference Books</b>	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.

<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/ Group Discussion/Case Study
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<b>Focus of the Course</b>	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

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• The fundamental aspects of programming and problem solving</li> <li>• The C language fundamentals</li> <li>• The representation and working of arrays, pointers, functions and files</li> </ul>
<b>Prerequisite</b>	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	<b>Introduction:</b> 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	<b>C Language Fundamentals:</b> 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	<b>Branching:</b> 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	<b>Strings:</b> 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	<b>Structures:</b> 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
<b>Total</b>		<b>60</b>	

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



Dr.NGPASC

COIMBATORE | INDIA

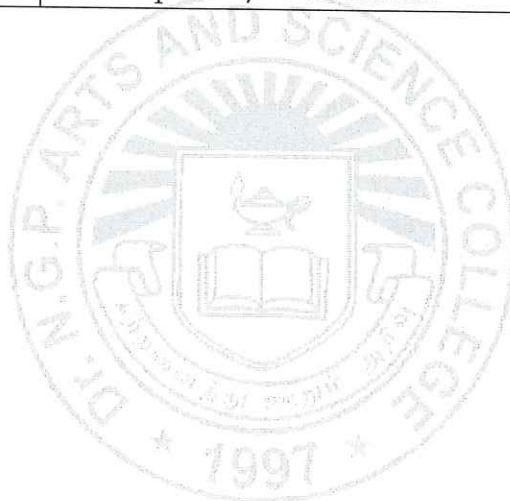
B.Sc(Information Technology)/(Students Admitted during the AY 2025-2

<b>Reference Books</b>	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.

<b>Journal and Magazines</b>	-
<b>E-Resources and Website</b>	<a href="https://nptel.ac.in">https://nptel.ac.in</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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25ITU1CP	CORE PRACTICAL: C Programming	SEMESTER II
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**Total Credits: 2**

**Total Instructions Hours: 48 h**

S.No	List of Programs
1	Program using various Operators in C
2	Implement Decision making statements in C
3	Program using Iteration statements in C
4	Implement Array concept in C
5	Program using User-defined functions
6	String Manipulations using Built-in functions
7	Demonstrate handling of pointers
8	Demonstrate string operations using pointers
9	Implement User-defined data types using Union
10	Implement Structure concept
11	Implement File operations
12	Implement Memory Management





Semester - I							
Core: DIGITAL COMPUTER FUNDAMENTALS							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25ITU1CA	DIGITAL COMPUTER FUNDAMENTALS	CORE	48	-	-	4

Preamble	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>the concepts of number system and circuits</li> <li>the principles of logic gates and memory</li> <li>the design and architecture of microprocessors and microcontrollers.</li> </ul>
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	✓		✓	✓	



25ITU1CA	<b>DIGITAL COMPUTER FUNDAMENTALS</b>
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### Syllabus

Unit	Content	Hrs	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 / Reference Book1
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 /Reference Book 3
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 / Reference Book1
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 / Reference Book 4 & You Tube Videos
<b>Total</b>		<b>48</b>	



<b>Text book</b>	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.
<b>Reference Books</b>	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.

<b>Journal and Magazines</b>	<a href="https://journal.uob.edu.bh/handle/123456789/12?id=about">https://journal.uob.edu.bh/handle/123456789/12?id=about</a> <a href="https://www.pcmag.com/">https://www.pcmag.com/</a>
<b>E-Resources and Website</b>	<a href="https://nptel.ac.in">https://nptel.ac.in</a> <a href="https://www.coursera.org/learn/digital-systems/">https://www.coursera.org/learn/digital-systems/</a> <a href="https://www.nesoacademy.org/ec/05-digital-electronics">https://www.nesoacademy.org/ec/05-digital-electronics</a>

<b>Learning Method</b>	Lecture/Simulation/Demo/Mind Mapping
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<b>Focus of the Course</b>	Skill Development/Employability
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Semester - I IDC: NUMERICAL METHODS AND STATISTICS							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	25MTU1IC	NUMERICAL METHODS AND STATISTICS	IDC	48	12	-	4

<b>Preamble</b>	<p>This course has been designed for students to learn and understand</p> <ul style="list-style-type: none"> <li>• the method of solving linear system of equations</li> <li>• the relation between two attributes and measure their efficiency</li> <li>• the method of checking the validity of parameters through test statistic</li> </ul>
<b>Prerequisite</b>	Knowledge on Basic Mathematics

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy 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					✓



25MTU1IC	IDC: NUMERICAL METHODS AND STATISTICS
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## Syllabus

Unit	Content	Hrs	Resources
I	<b>Solution of Algebraic, Transcendental and Linear systems of Equations</b> 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	<b>Interpolation, Numerical Differentiation and Integration</b> 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	<b>Classification, Measures of Central tendency and Dispersion</b> 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	<b>Correlation and Regression</b> 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	<b>Test of Significance and Chi-square Test</b> 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
	<b>Total</b>	<b>60</b>	

Note: 20% Theory and 80% Problem
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<b>Text book</b>	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).
<b>Reference Books</b>	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, "Statistics", S.Chand & Co, New Delhi.
	3.	Venkataraman M K, 2004, "Numerical Methods in Science and Engineering", 4 <sup>th</sup> Edition, NPC.
	4.	Veerarajan T, Ramachandran T, 2004, "Theory and Problems in Numerical Methods with Programs in C and C++", 10 <sup>th</sup> Edition, Tata Mc- Graw Hill Publishing Company Limited, New Delhi.

<b>Journal and Magazines</b>	<a href="https://www.worldscientific.com/worldscinet/bms">https://www.worldscientific.com/worldscinet/bms</a>
<b>E-Resources and Website</b>	<a href="https://nptel.ac.in">https://nptel.ac.in</a>

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

<b>Preamble</b>	This course has been designed for students to learn and understand <ul style="list-style-type: none"><li>• Multi-disciplinary aspects of Environmental studies</li><li>• Importance to conserve the biodiversity</li><li>• Causes of Pollution and 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 understand the importance of natural resources in order to conserve for the future	K1
<b>CO2</b>	To impart knowledge on Natural resources and its conservation	K2
<b>CO3</b>	To impart knowledge on Biodiversity and its conservation	K3
<b>CO4</b>	To create awareness on effects, causes and control of air, water, soil and noise pollution etc.,	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	✓	✓	✓	✓	✓



**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
	<b>Total</b>	<b>24</b>	



Text Book	1.	<i>Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt</i>
	2.	<i>Gadgil, M., &amp; 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 &amp; 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	<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



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