KG COLLEGE OF ARTS AND SCIENCE
Autonomous Institution | Affiliated to Bharathiar University
Accredited with A++ Grade by NAAC
ISO 9001:2015 Certified Institution
KGiSL Campus, Saravanampatti, Coimbatore – 641 035

Regulations 2026-31 for Postgraduate Programme

Learning Outcomes Based Curriculum Framework (LOCF) model with Choice Based Credit System (CBCS)

Programme: M.Sc. Software Systems (M.Sc. SS)

Programme Code: MSS

(Applicable for the Students Admitted During the Academic Year 2026-27 onwards)

Eligibility

The Student should have passed Higher Secondary Examination with Mathematics / Business Mathematics / Applied Mathematics. (As per the eligibility condition given **Ref. BU/R/B3-B4/Eligibility Condition/2026/7425 dated 15/05/2026).**

Program Learning Outcomes (PLOs)

The successful completion of the M.Sc. Software Systems programme shall enable the students to

PLO1	Assimilate technical concepts well to contribute code reviews and meet modern demands effectively in the area of Artificial Intelligence and Machine Learning.
PLO2	Develop skills for effective leadership in IT support, Network Architect, Web Developer and successful Entrepreneur as well.
PLO3	Use logical skills, analytical skills and programming skills relevant to Full Stack Development and DB Administration.
PLO4	Creatively use the knowledge in computational science, mathematics and statistics for Data Analysis, Data Science and Business Analysis to solve real world problems.
PLO5	Engage in lifelong learning with ethical principles for the betterment of self as well as society.

M.Sc. Software Systems

Distribution of Credits and Hours for all the Semesters

Part	Course Category	No. of Courses	Hours		Credits	Total Credits		Semester
I	Language-I	4	4 X 3	12	2 X 3	12	12	1 - 4
II	Language-II	4	4 X 3	12	2 X 3	12	12	1 - 4
III	Core Theory (6 hrs./week)	2	2 X 6	12	2 X 4	8	200	3
	Core Theory (5 hrs./week)	9	9 X 5	45	9 X 4	36		1 – 3, 5 - 8
	Core Theory (4 hrs./week)	13	13 X 4	52	13 X 4	52		4, 6 - 9
	Core Practical (4 hrs./week)	16	16 X 4	64	16 X 3	48		1 - 9
	Allied (4 hrs./week)	4	4 X 4	16	4 X 3	12		1 - 4
	Elective (5 hrs./week)	3	3 X 5	15	3 X 4	12		5, 6, 8
	Skill Enhancement Course (SEC) Lab	3	3 X 2	6	3 X 2	6		4, 5, 9
	SEC: Internship	1	-	-	1 X 2	2		5
	Project Work	2	-	-	2 X 12	24		7 & 10
IV	Ability Enhancement Compulsory Course (AECC)	3	3 X 2	6	3 X 2	6	6	1, 2, 4
	Ability Enhancement Compulsory Course (AECC) Online Course MOOC	1	-	-	1 X 2	2	2	3
	Foundation Course (FC)	1	-	-	1 X 2	2	2	3
Total		**65**		**240**		**234**	**234**	

Consolidated Semester wise and Component wise Hours and Credits distribution

Semester	Part I		Part II		Part III		Part IV		Total	
	Hrs.	Credits	Hrs.	Credits	Hrs.	Credits	Hrs.	Credits	**Hrs.**	**Credits**
1	3	3	3	3	22	17	2	2	**30**	**25**
2	3	3	3	3	22	17	2	2	**30**	**25**
3	3	3	3	3	24	17	-	4	**30**	**27**
4	3	3	3	3	22	19	2	2	**30**	**27**
5	-	-	-	-	30	26	-	-	**30**	**26**
6	-	-	-	-	30	26	-	-	**30**	**26**
7	-	-	-	-	-	12	-	-	**-**	**12**
8	-	-	-	-	30	26	-	-	**30**	**26**
9	-	-	-	-	30	28	-	-	**30**	**28**
10	-	-	-	-	-	12	-	-	**-**	**12**
Total	**12**	**12**	**12**	**12**	**210**	**200**	**6**	**10**	**240**	**234**

Curriculum

M.Sc. Software Systems

Semester – 1									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Maximum Marks**			
						CIA	**ESE**	**Total**	
26TAM11L	I	Language – I	Tamil – I	3	3	25	75	100	3
26HIN11L			Hindi – I						
26MAL11L			Malayalam – I						
26FRE11L			French – I						
26ENG12L	II	Language – II	English – I	3	3	25	75	100	3
26MSS13C	III	Core – I	Computing Fundamentals and C Programming	5	3	25	75	100	4
26MSS14P	III	Core Lab - I	C Programming Lab	4	3	40	60	100	3
26MSS15C	III	Core – II	Digital Computer Fundamentals	5	3	25	75	100	4
26MSS16P	III	Core Lab - II	Python and Big Data Fundamentals Lab	4	3	40	60	100	3
26MSS17A	III	Allied - I	Numerical Techniques	4	3	25	75	100	3
26SOF1AE	IV	AECC - I	Soft Skills	2	2	-	50	50	2
Total				**30**				**750**	**25**

Semester – 2									
Course Code	Part	Course Category	Course Name	Hours/ Week	Examination				Credits
					Duration in Hours	Max Marks			
						CIA	ESE	Total	
	I	Language – I	Tamil – II	3	3	25	75	100	3
			Hindi – II						
			Malayalam – II						
			French – II						
	II	Language –II	English – II	3	3	25	75	100	3
	III	Core – III	C++ Programming	5	3	25	75	100	4
	III	Core Lab -III	C++ Programming Lab	4	3	40	60	100	3
	III	Core – IV	Computer Networks	5	3	25	75	100	4
	III	Core Lab-IV	Big Data Analytics Lab	4	3	40	60	100	3
	III	Allied – II	Applied Mathematics	4	3	25	75	100	3
	IV	AECC - II	Innovation and Design Thinking	2	2	-	50	50	2
			Intellectual Property Rights						
			Entrepreneurship Development						
Total				**30**				**750**	**25**

Semester – 3									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	I	Language – I	Tamil – III	3	3	25	75	100	3
			Hindi – III						
			Malayalam – III						
			French – III						
	II	Language – II	English – III	3	3	25	75	100	3
	III	Core – V	Object Oriented Programming with Java	6	3	25	75	100	4
	III	Core Lab - V	Java Programming Lab	4	3	40	60	100	3
	III	Core - VI	Data Structures and Applications	6	3	25	75	100	4
	III	Core Lab -VI	Data Warehousing and Data Pipeline Engineering Lab	4	3	40	60	100	3
	III	Allied - III	Discrete Structures	4	3	25	75	100	3
	IV	Foundation Course	Basic Tamil	-	2	50	-	50	2
			Advanced Tamil						
			Indian Knowledge Systems (IKS)						
	IV	AECC - III	Online Course MOOC	-	-	50	-	50	2
Total				**30**				**800**	**27**

Semester – 4									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	I	Language - I	Tamil-IV/ Hindi-IV/ Malayalam-IV/ French-IV	3	3	25	75	100	3
	II	Language - II	English - IV	3	3	25	75	100	3
	III	Core - VII	RDMS Programming	4	3	25	75	100	4
	III	Core Lab - VII	RDBMS Lab	4	3	40	60	100	3
	III	Core - VIII	Operating Systems	4	3	25	75	100	4
	III	Core Lab - VIII	Applied Data Engineering Lab	4	3	40	60	100	3
	III	Allied - IV	Operations Research	4	3	25	75	100	3
	III	SEC Lab - I	Arduino Programming Essentials Lab	2	3	40	60	100	2
	IV	AECC - IV	Innovation and Design Thinking	2	2	-	50	50	2
			Intellectual Property Rights						
			Entrepreneurship Development						
Total				**30**				**850**	**27**

Semester – 5									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	III	Core – IX	Linux and Shell Programming	5	3	25	75	100	4
	III	Core Lab - IX	Linux and Shell Programming Lab	4	3	40	60	100	3
	III	Core - X	Web Designing and Applications	5	3	25	75	100	4
	III	Core Lab - X	Web Application Development and Hosting Lab	4	3	40	60	100	3
	III	Core - XI	Computer Networks	5	3	25	75	100	4
	III	Elective - I	Exploratory Data Analysis **(Data Science)**	5	3	25	75	100	4
			Blockchain Technology and Applications **(Cyber Security)**						
			Data Preprocessing and Visualization **(Machine Learning)**						
	III	SEC Lab - II	Raspberry PI Lab	2	3	40	60	100	2
	III	SEC	SEC: Internship	-	-	50	-	50	2
Total				**30**				**750**	**26**

Semester – 6									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	III	Core – XII	Data Mining and Warehousing	5	3	25	75	100	4
	III	Core Lab - XI	Data Mining Lab using R	4	3	40	60	100	3
	III	Core - XIII	Graphics and Multimedia	4	3	25	75	100	4
	III	Core Lab-XII	Graphics and Multimedia Lab	4	3	40	60	100	3
	III	Core - XIV	Software Engineering	4	3	25	75	100	4
	III	Core - XV	Advanced Operating Systems	4	3	25	75	100	4
	III	Elective - II	Big Data Analytics **(Data Science)**	5	3	25	75	100	4
			Ethical Hacking **(Cyber Security)**						
			Neural Networks and Deep Learning **(Machine Learning)**						
Total				**30**				**700**	**26**

Semester – 7									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	III	Project	Project Work – I	-	-	80	120	200	12
Total				**-**	**-**			**200**	**12**

Semester – 8									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Max Marks**			
						CIA	**ESE**	**Total**	
	III	Core – XVI	Advanced Java Programming	5	3	25	75	100	4
	III	Core Lab- XIII	Advanced Java Programming Lab	4	3	40	60	100	3
	III	Core - XVII	Software Testing	4	3	25	75	100	4
	III	Core Lab-XIV	Software Testing Lab	4	3	40	60	100	3
	III	Core - XVIII	Network Security and Cryptography	4	3	25	75	100	4
	III	Core - XIX	Data Science and Analytics	4	3	25	75	100	4
	III	Elective - III	Social Network Analytics **(Data Science)**	5	3	25	75	100	4
			Digital and Mobile Forensics **(Cyber Security)**						
			Generative AI and Prompt Engineering **(Machine Learning)**						
Total				**30**				**700**	**26**

Semester – 9									
Course Code	Part	Course Category	Course Name	Hours / Week	Examination				Credits
					Duration in Hours	Max Marks			
						CIA	ESE	Total	
	III	Core – XX	Artificial Intelligence and Machine Learning	4	3	25	75	100	4
	III	Core - XXI	Digital Image Processing	4	3	25	75	100	4
	III	Core Lab - XV	Digital Image Processing Lab using MATLAB	4	3	40	60	100	3
	III	Core - XXII	Advanced Software Engineering	4	3	25	75	100	4
	III	Core - XXIII	Cloud Computing	4	3	25	75	100	4
	III	Core Lab-XVI	Cloud Computing Lab	4	3	40	60	100	3
	III	Core - XXIV	Robotic Processes Automation for Business	4	3	25	75	100	4
	III	SEC Lab - III	Artificial Intelligence and Machine Learning Lab	2	3	40	60	100	2
Total				**30**				**800**	**28**

Semester – 10									
Course Code	Part	Course Category	Course Name	Hours / Week	Examination				Credits
					Duration in Hours	Max Marks			
						CIA	ESE	Total	
	III	Project	Project Work – II	-	-	80	120	200	12
Total				**-**	**-**			**200**	**12**
Grand Total				**240**				**6500**	**234**

Semester 1

Semester – 1									
Course Code	**Part**	**Course Category**	**Course Name**	**Hours / Week**	**Examination**				**Credits**
					Duration in Hours	**Maximum Marks**			
						CIA	**ESE**	**Total**	
26TAM11L	I	Language – I	Tamil – I	3	3	25	75	100	3
26HIN11L			Hindi – I						
26MAL11L			Malayalam – I						
26FRE11L			French – I						
26ENG12L	II	Language – II	English – I	3	3	25	75	100	3
26MSS13C	III	Core – I	Computing Fundamentals and C Programming	5	3	25	75	100	4
26MSS14P	III	Core Lab - I	C Programming Lab	4	3	40	60	100	3
26MSS15C	III	Core – II	Digital Computer Fundamentals	5	3	25	75	100	4
26MSS16P	III	Core Lab - II	Python and Big Data Fundamentals Lab	4	3	40	60	100	3
26MSS17A	III	Allied - I	Numerical Techniques	4	3	25	75	100	3
26SOF1AE	IV	AECC - I	Soft Skills	2	2	-	50	50	2
Total				**30**				**750**	**25**

Part – I: Language I – Tamil – I

Course Code	Course Name	Category	Hours / Week	Credits
26TAM11L	Tamil - I	Language – I	3	3

Course Objectives

The Course intends to cover

- இலக்கியத்தின் வளர்ச்சி நிலைகளைக் கற்பித்தல்
- மொழியியல் அடிப்படையில் இலக்கணம் கற்பித்தல்
- திறனாய்வு முறையினை ஊக்குவித்தல்
- படைப்பாக்கத் திறன் பயிற்சி அளித்தல்

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	புதுக்கவிதையின் மூலம் வாழ்வியல் விழுமியங்களை உணர்ந்து கொள்வர்.	K1, K2
CLO2	சிறந்த மற்றும் வாழும் கவிஞர்களின் கவிதை வழியாக தர்மம், அன்பு, ஈகை போன்ற மனித மாண்புகளை அறிந்து கொள்வர்.	K2, K3
CLO3	சிறந்த படைப்பாளர்களின் சிறுகதைகள் மற்றும் குறுநாவலில் வெளிப்படும் சமூகச் சிந்தனைகளை அறிந்து ஒழுகுதல்.	K3
CLO4	தற்கால இலக்கியங்களான புதுக்கவிதை, சிறுகதை தோன்றி வளர்ந்த பின்புலத்தை அறிதல்.	K1, K3
CLO5	மொழித்திறனைக் கற்றலின் வாயிலாக நடைமுறை வாழ்வியலுக்குத் தேவையான சிறுகதை மற்றும் புதுக்கவிதைகளைப் படைத்தல்.	K2, K3
K1 - Remember; **K2** - Understand; **K3** – Apply		

Part – I: Language – I: தமிழ் - I

Unit	Content	No. of Hours
I	**நாட்டுப்பற்று** 1. பாரதியார - உலகத்தை நோக்கி வினவுதல் 2. பாரதிதாசன் - தமிழ்ப்பேறு 3. கவிமணி - ஒற்றுமையே உயிர்நிலை 4. தேவதேவன் - சாலையும் மரங்களும் செருப்பும், புதிய வீடு 5. அப்துல் ரகுமான் - போட்டி, பாதை 6. கவிஞர் வாலி - புத்தகச் சந்தை	10
II	**சமூகம்** 1. ஈரோடு தமிழன்பன் - எட்டாவது சீர்... 2. கவிஞர் தாமரை - தொலைந்து போனேன் 3. நா. காமராசன் - திருநங்கைகள் காகிதப் பூக்கள் 4. வைரமுத்து - மரங்களைப் பாடுவேன் 5. அமுத பாரதி - புள்ளிப் பூக்கள் (ஹைக்கூ) 6. நாட்டுப்புறப் பாடல்கள் (தாலாட்டுப் பாடல் , தெம்மாங்கு பாடல் , உழவுத்தொழில்)	10
III	**வாழ்வியல்** சிறுகதை 1. காஞ்சனை - புதுமைப்பித்தன் 2. சோற்றுக் கணக்கு - ஜெயமோகன் 3. மரத்தைக் கர்ப்பம் சுமந்தவள் - ஆண்டாள் பிரியதர்சினி குறுநாவல் • ஆயிஷா – இரா.நடராசன்	9
IV	**இலக்கிய வரலாறு** 1. மரபுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 2. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 3. ஹைக்கூ கவிதையின் தோற்றமும் வளர்ச்சியும் 4. சிறுகதையின் தோற்றமும் வளர்ச்சியும்	8

Unit	Content	No. of Hours
V	**இலக்கணம் மற்றும் படைப்பாற்றல்** 1. எழுத்துகள் (முதல் எழுத்துகள், சார்பெழுத்துகள்) 2. எழுத்துக்களின் பிறப்பு 3. மாத்திரைகள் 4. படைப்பாற்றல் திறன்(சிறுகதை மற்றும் புதுக்கவிதைப் படைத்தல்)	8
	Total Hours	**45**

Reference Books	
1	பேரா. குருசாமி, ம.ரா.போ. (2014), பாரதி பாடல்கள், ஆய்வுப் பாதிப்பு, தமிழ்ப் பல்கலைக் கழகம், தஞ்சாவூர்.
2	அப்துல் ரகுமான்,(2000), ஆலாபனை, கவிக்கோ பதிப்பகம்.
3	தாமரை, (1995), ஒரு கதவும் கொஞ்சம் கள்ளிப்பாலும் கவிதை தொகுப்பு, காந்தளகம் பதிப்பகம், சென்னை.
4	வரதராசனார் மு, (2021), தமிழ் இலக்கிய வரலாறு, சாகித்ய அகாடமி பதிப்பு.
5	முனைவர் பஞ்சாங்கம் கா, (2017), தமிழ் இலக்கிய வரலாறு, காவ்யா பதிப்பகம்.
6	முனைவர் வேங்கடராமன் கா. கோ (2008), தமிழ் இலக்கிய வரலாறு, கலையக வெளியீடு.
7	ஜெயமோகன், (2024), அறம் (சிறுகதை), விஷ்ணுபுரம் பதிப்பகம்.
8	இரா.நடராசன், (2022) ஆயிஷா, பாரதி புத்தகாலயம்.
9	குமரன் கோ (2010), தமிழ் இலக்கணம் எளிய அறிமுகம் , சந்தியா பதிப்பகம்.
10	சக்திவேல் சு,(2012), நாட்டுப்புறவியல், மணிவாசகர் பதிப்பகம்.

Part – I: Language I – Hindi – I

Course Code	Course Name	Category	Hours / Week	Credits
26HIN11L	**Hindi - I**	**Language - I**	**3**	**3**

Course Objectives

The Course intends to

- Improve grammatical knowledge
- Continue to read and learn about articles and think about them
- Read and understand short stories and understand the thoughts and life of the people of this country
- Provide translation knowledge and the ability to read and analyse a message are also gained

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Understand the text styles and grammatical elements.	K1
CLO2	Discuss the content of a reading passage.	K2
CLO3	Develop an interest in the appreciation of short stories.	K2, K3
CLO4	Comprehend the grammatical structures and sentence making.	K3
CLO5	Understand the language and developing English to Hindi translation skill.	K4
K1 - Remember; **K2** - Understand; **K3** – Apply; **K4**-Analyse		

Part – I: Language – I - Hindi - I

Unit	Content	No. of Hours
I	**Prose : Bharthi Gadya Sangrah** 1.Sanskurthi hai kya? (Lalith nibandh)- Ramdhari singh Dinkar 2. Voh cheeni Bhayi (Rekha chitra) – Mahadevi varma 3. Badthe shor ka gahratha sankat (pradoshan) - Rajendrakumr ray & Ravindra Varma 4. Ghar Loutthe huye – (Athma katha) – Harivamshraai Bacchan 5. Paramanu urja evam khadya padarth samrakshan (vaigyanik lek) - Parmaanu urja vibhag (Bharth sarkar) 6. Cinema (film) – Manmohan Chdda	10
II	**Non Detailed Text Short Stories: Aat Kahaniyan** 1. Vrath-bang - Jayashankar Prasad 2. Sath gathi - Premchand 3. parda - Yespal 4. Apna apna bhagya - Jaynendrakumar 5. Bhrammarakshas ka shishya - Mukthibhodh 6. Dana-bhusa - Markandeya	10
III	**Grammar : Shabdha Vichar only** (Noun, Pronoun, Adjective, Verb, Tense, Case Endings) Theoretical & Applied.	9
IV	**Translation : English – Hindi only** Anuvadh Abhyas – III (1-15 Lessons only)	8
V	**Comprehension**: 1 Passage From Anuvadh Abhyas–III (16-30)	8
	Total Hours	**45**

Text Books	
1	Bharathi gadya sangrah, editor: Madhudhavan, publisher: Vani prakashan, 4697/5,Daryaganch, New Delhi – 110002.
2	Aatt Kahaniyan, Editor : Dr. H.R. Mihir, Publisher : Jaya bharthi prakashan, 267 B, Maya press Road, Allahabad–211 003
Reference Book	
1	Naveenhindivyakaran, 2002,Dakshin Bharat Hindi Prachar, Sabha,Chennai–600017

Part – I: Language – I - Malayalam – I

Course Code	Course Name	Category	Hours / Week	Credits
26MAL11L	Malayalam - I	Language - I	3	3

Course Objectives

The Course intends to

- Improve grammatical knowledge
- Read and learn about articles and think about them
- Read and understand short stories and understand the thoughts and life of the people of this state
- Provide translation knowledge and the ability to read and analyze a message

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Understand the text styles and grammatical elements	K1
CLO2	Discuss the content of a reading passage	K1
CLO3	Develop an interest in the appreciation of short stories	K2
CLO4	Comprehend the grammatical structures and sentence making	K3
CLO5	Understand the language and developing English to Malayalam translation skill	K4
K1 - Remember; **K2** - Understand; **K3** – Apply ; **K4**-Analyse.		

Part – I: Language – I - Malayalam – I

Unit	Content	No. of Hours
I	Novel – Njanabharam - E. Santhoshkumar	10
II	Novel – Njanabharam - E. Santhoshkumar	10
III	Short Story - Ente Priyapetta Kadhakal –Sara Joseph	9
IV	Short Story - Ente Priyapetta Kadhakal – Sara Joseph	8
V	Composition & Translation (English to Malayalam)	8
	Total Hours	**45**

Text Books

1	Novel -Njanabharam - E. (2018) Santhoshkumar, Mathrubhumi Books, Kochi, Kerala.
2	Short Story-Ente Priyappeta Kadhakal -Sara Joseph, (2005) D.C.Books,Kottayam, Kerala.
3	Expansion of ideas, General Essay and Translation. (A Simple passage).

Reference Books

1	Malayala Novel SahithyaCharitram-K.M.Tharakan (2018) (N.B.S.Kottayam)
2	Cherukatha Innale Innu-M.Achuyuthan (2020) (D.C Books, Kottayam)
3	Sahithya Charitram Prasthanangalilude- Dr.K.M George, (2017) (D.C.Books Kottayam)
4	Malayala Sahithyavimarsam- Sukumar Azheekode (2022) (D.C.books)

Part – I: Language I – French - I

Course Code	Course Name	Category	Hours / Week	Credits
26FRE11L	French - I	Language - I	3	3

Course Objectives

The Course intends to cover

- Familiar everyday expressions and basic phrases aimed at the satisfaction of concrete needs.
- Key aspects and recognize of Francophone cultures such as greetings, etiquette, daily life, and basic geography of French-speaking countries.
- Short, simple texts such as postcards, emails, or short descriptions about themselves and their immediate environment.
- Construction of simple sentences using correct word order and basic vocabulary.
- The developing of sensitivity to cross-cultural differences in communication and social practices.
- The reading and understanding of short, simple texts such as personal messages, advertisements, menus, and schedules.

Course Learning Outcomes

On the successful completion of the course, student will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Improve all the four French language skills (speaking, listening, reading, and writing) (Effective communicators).	K1
CLO2	Comprehend French and other Francophone nations' cultures and civilizations.	K2
CLO3	Comprehend the fundamentals of language structure, vocabulary, grammar, and phonetics (language skill).	K3
CLO4	The French DELF-A1 Certification is appreciated.	K4
K1 - Remember; **K2** - Understand; **K3** – Apply; **K4**-Analyse		

Part – I: Language – I French – I

Unit	Content	No. of Hours
I	Grammaire: pg(122-124) Bienvenue (pg 10-17)	10
II	Contacts(pg 18-28) Grammaire: pg(125-128)	10
III	Communication pg(29-33) Grammaire: pg(129-130)	9
IV	Qu'est-ce qu'il font pg(34-44) Grammaire: pg(131-136)	8
V	Communication pg(45-49) Grammaire: pg(137-139(	8
Semester I Portions from Textbook « Nouvelle Génération A1» :UNITÉ 1, UNITÉ 2 (Pg 10-49). Cahier d'exercices (Pg122-139)		
	Total Hours	**45**

Reference Books	
1	Luca Giachino, Carla Baracco, Romain Chrétien (DELF), (2022) Nouvelle Génération A1, Didier FLE.
2	Nathalie Hirschsprung, Tony Tricot, 2017, Cosmopolite, Hachette.

Course Code	Course Name	Category	Hours / Week	Credits
26ENG12L	English-I	Language-II	3	3

Course Objectives

The course intends to cover

- Textual analysis of poetry and short stories that explore themes of nature and morality.
- Vocabulary through contextual guessing, lexical relations and diverse word formation processes.
- Usage of Grammar and Communication

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Identify and interpret poetic elements in nature poetry to nurture aesthetic sensibility, creativity, and cultural awareness.	K1, K2
CLO2	Apply characterization and narrative techniques to appreciate literary qualities in short stories and to comprehend ethical responsibility through textual analysis.	K2,K3
CLO3	Employ grammatical proficiency in nouns, pronouns, and verbs to enhance clarity and correctness in academic and workplace communication.	K3, K4
CLO4	Apply vocabulary strategies to enhance clarity in diverse communicative situations.	K3
CLO5	Demonstrate effective communication skills that support professional growth and lifelong learning.	K3
K1 - Remember; **K2** - Understand; **K3** – Apply; **K4**-Analyse		

Language II: Part II - English-I

Unit	Content	No. of Hours
I	**Poetry** : **Nature** 1. I Wandered Lonely as a Cloud - William Wordsworth 2. The Bird Sanctuary - Sarojini Naidu 3. Stopping by Woods on a Snowy Evening – Robert Frost	9
II	**Short Stories: Morality** 1. The Necklace – Guy de Maupassant 2. The Taxi Driver – K.S. Duggal 3. The Monkey's Paw - W. W. Jacobs	9
III	**Grammar** 1. **Nouns:** Types, Singular vs. Plural forms, Case and Gender, Common errors with nouns 2. **Pronouns:** Types, Personal, Possessive, Reflexive, Intensive (Emphatic), Demonstrative, Relative, Interrogative, Indefinite, and Reciprocal pronouns, Common errors with pronouns 3. **Verbs:** Action verbs and linking verbs, Transitive and intransitive verbs, Auxiliary verbs and Modal verbs, Verb tenses, Common errors with verbs	9
IV	**Language Competency: Vocabulary** 1. **Vocabulary:** Synonyms, Antonyms, Guessing meaning from context, 2. **Word Formation**: Homonyms, Homophones, Homographs, Portmanteau words, Collocations, Compounding Words, Root Words, Prefixes and Suffixes, Clipping, Acronym, Abbreviations, Reduplication	9
V	**English for Communication** 1. Listening for General and Specific Information. 2. Self - Introduction, Introducing others, Greetings. 3. Intensive Reading - a prose passage, a poem and a short story 4. Descriptive writing – writing descriptive essays in two to three paragraphs.	9
	Total Hours	**45**

Reference Books

1.	Carter, R., McCarthy, M., Mark, G., & O'Keeffe, A. (2016). English Grammar Today. Cambridge University Press.
2.	Swan, M. (2021). Practical English Usage (4th ed.). Oxford University Press.
3.	McCarthy, M., & O'Dell, F. (2017). English Vocabulary in Use: Advanced (3rd ed.). Cambridge University Press.
4.	Ramazani, J., Ellmann, R., & O'Clair, R. (Eds.). (2003). The Norton Anthology of Modern and Contemporary Poetry (Vols. 1–2). W. W. Norton & Company.
5.	Wren, P. C., & Martin, H. (2015). High School English Grammar and Composition (50th ed.). S. Chand & Company.
6.	Jones, L. (2015). Cambridge English for Life Skills. Cambridge University Press.

Web Resources (Swayam/NPTEL)

1.	https://nptel.ac.in/courses/109105205

Course Code	Course Name	Category	Hours / Week	Credits
26MSS13C	Computing Fundamentals and C Programming	Core - I	5	4

Course Objectives

This course intends to cover

- Computer fundamentals, problem solving and C programming concepts.
- Control structures, arrays, functions, structures & unions and memory allocation.
- Pointers and file management.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Learn the concepts of computer fundamentals and problem solving.	K1
CLO2	Understand the basic concepts of C Programming.	K2
CLO3	Summarize the different decision making and looping statements.	K2
CLO4	Demonstrate the concept of user defined Functions, Recursions, Scope and Lifetime of Variables, Structures and Unions.	K2
CLO5	Construct C programs using Pointers, Arrays and file management.	K3
K1 – Remember; **K2** - Understand; **K3** – Apply;		

CLO – PLO Mapping

CLOs/PLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	2	3	3	2	2
CLO2	3	2	3	2	2
CLO3	2	2	2	2	2
CLO4	3	2	3	2	3
CLO5	3	3	3	2	2
3 - Substantial (high)		2 - Moderate (medium)		1 - Slight (low)	

Core - I: Computing Fundamentals and C Programming

Unit	Content	No. of Hours
I	**Fundamentals of Computers & Problem Solving in C**: Introduction – History of Computers - Generations of Computers - Classification of Computers - Basic Anatomy of a Computer System - Input Devices – Processor - Output Devices - Memory Management – AI Memory System - Types of Software - Overview of Operating System - Programming Languages -Translator Programs - Problem Solving Techniques - Overview of C.	15
II	**Overview of C** : Introduction - Character Set - Structure of a C program - C Tokens - Keyword and Identifiers - Constants - Variables - Data types - Declaration of variables - Assigning Values to Variables - Defining Symbolic Constants - Arithmetic, Relational, Logical, Assignment, Conditional, Bitwise, Special, Increment and Decrement operators – Arithmetic Expressions - Evaluation of Expression - Precedence of Arithmetic Operators –Type Conversion in Expression – Operator Precedence and Associativity - Mathematical Functions - Reading and Writing a Character - Formatted Input and Output.	15
III	**Decision Making, Looping and Arrays**: Introduction – if, if….else, Nesting of if …else statements - elseif ladder – The switch Statement, The ?: Operator – The goto Statement. **Decision Making and Looping**: Introduction - The while Statement - The do Statement – The for Statement - Jumps in Loops. **Arrays**: Character Arrays and Strings.	15
IV	**User-Defined Functions, Structures and Unions:** Introduction – Need and Elements of User-Defined Functions – Definition - Return Values and their Types - Function Calls –Declarations – Category of Functions - Nesting of Functions – Recursion - Passing Arrays and Strings to Functions – The Scope, Visibility and Life Time of Variables - Multifile Programs - Structures and Unions - Dynamic Memory Allocation – malloc(), calloc(), free().	15
V	**Pointers and File Management:** Introduction - Understanding Pointers - Accessing the Address of a Variable - Declaration and Initialization of Pointer Variable – Accessing a Variable through its Pointer - Chain of Pointers - Pointer Expressions - Pointer Increments and Scale Factor - Pointers and Arrays - Pointers and Strings – Array of Pointers – Pointers as Function Arguments - Functions Returning Pointers – Pointers to Functions – Pointers and Structures. **File Management in C**.	15
	Total Hours	**75**

Text Books	
1.	E Balagurusamy, (2017), Computing Fundamentals and C Programming, 2nd Edition, Tata McGraw-Hill.
2.	Yeswanth P Kanetkar, (2022), Let us C, 19th Edition, BPB Publications.
Reference Books	
1.	Ashok N Kamthane, (2009), Programming with ANSI and Turbo C, 6th Edition, Pearson Education.
2.	Henry Mullish & Hubert L. Cooper, (2008), The Sprit of C, 1st Edition, Jaico.
3.	Deitel & Deitel, (2022), C How to Program, 9th Edition, PHI/Pearson Education Asia.
Web Resources (Swayam/NPTEL/Other)	
1.	https://onlinecourses.nptel.ac.in/noc24_cs02/preview
2.	https://onlinecourses.swayam2.ac.in/e-learning/preview/cec20_cs02
3.	https://atlan.com/know/ai-memory-system/

Course Code	Course Name	Category	Hours/Week	Credits
26MSS14P	C Programming Lab	Core Lab - I	4	3

S. No.	List of Programs
1	Find the sum, average, standard deviation for a given set of numbers.
2	Program to display day of the week using switch case.
3	Program to generate n prime numbers.
4	Program to generate Fibonacci series.
5	Print a magic square of order n where n>3 and n is odd.
6	Sort the given set of numbers in ascending order.
7	Check whether the given string is a palindrome or not using Pointers.
8	Count the number of vowels in the given sentence.
9	Program to find the factorial of a given number using a recursive function.
10	Print the students Mark sheet assuming roll no, name, and marks in 5 subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.
11	Write a function using Pointers to add two matrices and to return the resultant matrix to the Calling function.
12	Program using malloc() and calloc() to store numbers dynamically.
13	Program which receives two filenames as arguments and check whether the file contents are the same or not. If the same, delete the second file.
14	Program which takes a file as a command line argument and copy it to another file. At The end of the second file write the total i) no of chars ii) no. of words and iii) no. of lines.
15	Perform basic operations using Github platform.
	Total Hours **60**
Text Books	
1.	E Balagurusamy, (2017), Computing Fundamentals and C Programming, 2nd Edition, Tata McGraw-Hill.
2.	Yeswanth P Kanetkar, (2022), Let us C, 19th Edition, BPB Publications.
Reference Books	
1.	Ashok N Kamthane, (2002), Programming with ANSI and Turbo C, Pearson, McGraw-Hill.
2.	Henry Mullish & Hubert L. Cooper, (2008), The Sprit of C, 1st Edition, Jaico.
3.	Deitel & Deitel (2022), C How to Program, 9th Edition, PHI/Pearson Education Asia.
Web Resources (Swayam/NPTEL)	
1.	https://onlinecourses.nptel.ac.in/noc24_cs02/preview
2.	https://onlinecourses.swayam2.ac.in/e-learning/preview/cec20_cs02

Course Code	Course Name	Category	Hours / Week	Credits
26MSS15C	Digital Computer Fundamentals	Core - II	5	4

Course Objectives

This course intends to cover

- Different number systems, digital arithmetic and logic circuits.
- Combinational Logic, sequential circuits, buses, I/O devices, flipflops, and bus structure.
- Memory hierarchy and memory organization.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Learn the basic structure of number system and understand the arithmetic and logical operations.	K3
CLO2	Define the functions to simplify the boolean equations using logic gates.	K1
CLO3	Understand various data transfer techniques in digital computer and control unit operations.	K2
CLO4	Compare the functions of the memory organization.	K4
CLO5	Analyze architectures and computational designs concepts related to architecture Organization and addressing modes	K4
K1- Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze;		

CLO – PLO Mapping

CLOs/PLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	3	2	1	2	2
CLO2	2	3	1	2	1
CLO3	2	3	2	2	1
CLO4	3	3	2	3	1
CLO5	3	3	3	3	2
3 - Substantial (high)		2 - Moderate (medium)		1 - Slight (low)	

Core - II: Digital Computer Fundamentals

Unit	Content	No. of Hours
I	**Number System and Gates**: Decimal, Binary, Octal, Hexadecimal – Binary Addition, Multiplication, Division – Floating Point Representation, 1's Complements – 2's Complements - Binary Coded Decimal (BCD), Excess3, Gray Code, ASCII Code. **Digital Logic**: The Basic Gates– NOR, NAND, XOR Gates - NAND as Universal Gate – NOR as Universal Gate.	15
II	**Combinational Logic and Sequential Circuits**: Combinational Logic Circuits - Boolean Algebra – Commutative, Associative and Distributive Laws – Duality Theorem - Demorgan's Theorems – Sum of Products - Product of sum - Karnaugh Map – Canonical form Construction and Properties – Implicates – Don't Care Combinations - Simplifications.	15
III	**Arithmetic and Sequential Circuits:** Half Adder - Full Adder - Half Subtractor - Full Subtractor - Parallel Binary Adder - Parallel Binary Subtractor - Parallel Binary Adder / Subtractor - BCD Adder - Multiplexers - Demultiplexers. - Decoder – Encoder. **Sequential Circuits**: Flip-Flops RS, Clocked RS, D, JK, JK Master Slave and T – Shift Registers - Counters - Synchronous Counter - Asynchronous Counter - Up Down Counter – AI in Traffic Management.	15
IV	**Input – Output Organization:** Input – Output Interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. **Asynchronous Data Transfer**: Strobe Control and Handshaking. **Priority Interrupt:** Daisy - Chaining Priority, Parallel Priority Interrupt. **Direct Memory Access**: DMA Controller, DMA Transfer. **Input – Output Processor:** CPU-IOP Communication.	15
V	**Memory Organization:** Memory Hierarchy - Main Memory. **Associative Memory:** Hardware Organization, Match Logic, Read Operation, Write Operation. **Cache Memory**: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization. **Virtual Memory**: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory, Page Table, Page Replacement.	15
	Total Hours	**75**

Text Books	
1.	Morris Mano, (2022), Computer System Architecture, Pearson Education.
2.	Albert Paul Malvino and Donald P. Leech, (2019), Digital Principles and Applications, McGraw Hill Company.
Reference Books	
1.	Puri V K, (2017), Digital Electronics: Circuits and Systems, McGraw Hill Education.
2.	Salivahanan S, (2012), Digital Circuits and Design, McGraw Hill Education.
Web Resources (Swayam / NPTEL)	
1.	https://onlinecourses.swayam2.ac.in/aic20_sp04/preview
2.	https://onlinecourses.swayam2.ac.in/cec24_cs09/preview
3.	https://www.isarsoft.com/article/ai-in-traffic-management?utm_source=chatgpt.com

Course Code	Course Name	Category	Hours / Week	Credits
26MSS16P	Python and Big Data Fundamentals Lab	Core Lab - II	4	3

Unit	Content	No. of Hours
I	**Python Programming Basics:** Variables and Data Types – Control Flow (if, loops) – Functions – Lists, Tuples, Dictionaries – Basic Problem Solving 1. Program to write conditional structures. 2. Program to implement functions. 3. Program to perform list and dictionary operations.	12
II	**Intermediate Python:** Object-Oriented Programming – Exception Handling – File Handling (CSV, TXT) – Introduction to NumPy – Introduction to Pandas 1. Program to read and analyze CSV data. 2. Program to filter datasets using Pandas. 3. Program to perform simple data aggregations.	12
III	**Database Fundamentals for Big Data:** DBMS Concepts – SQL Basics (SELECT, WHERE, GROUP BY) – Joins – Constraints – CRUD Operations – Python-SQL Connectivity. 1. Program to create and manage a database. 2. Program to perform aggregation queries. 3. Program to connect Python with MySQL/PostgreSQL.	12
IV	**Data Preparation & Analysis:** Data Cleaning using Pandas – Handling Missing Values – Removing Duplicates – Basic Data Visualization using Matplotlib – Generating Summary Statistics. 1. Program to clean real-world datasets. 2. Program to generate statistical summaries. 3. Program to create basic charts.	12
V	**Data Analysis System:** Import Dataset – Clean Data – Store in Database – Generate Reports – Documentation. 1. Program to build a simple data analysis workflow.	12
	Total Hours	**60**
Text Book		
1.	Luciano Ramalho, (2022), Fluent Python, 2nd Edition, O'Reilly.	
Reference Books		
1.	Wes McKinney, (2017), Python for Data Analysis, 2nd Edition, O'Reilly.	
2.	Alan Beaulieu, (2022), Learning SQL, 2nd Edition, O'Reilly.	
Web Resources (Swayam / NPTEL)		
1.	https://onlinecourses.nptel.ac.in/noc22_cs32/preview 2	
2.	https://onlinecourses.nptel.ac.in/noc21_cs45/preview 3	
3.	https://onlinecourses.nptel.ac.in/noc20_cs92/preview	

Course Code	Course Name	Category	Hours / Week	Credits
26MSS17A	Numerical Techniques	Allied-I	4	3

Course Objectives

The course intends to cover

- Methods and techniques that address large and complex systems, particularly when obtaining an analytical solution is challenging.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Summarize the procedures involved in iterative techniques for finding approximate solutions.	K1
CLO2	Understand the numerical solutions of simultaneous linear equations using different methods.	K2
CLO3	Understand the concept of numerical solutions in differentiation of functions.	K2
CLO4	Apply numerical integration techniques such as trapezoidal rule and simpson's rules to evaluate definite integrals.	K3
CLO5	Demonstrate the use of various numerical methods for solving first-order ordinary differential equations.	K4
K1 - Remember; **K2** - Understand; **K3** – Apply; **K4** – Analyze;		

CLO – PLO Mapping

CLOs/PLOs	PLO1	PLO2	PLO3	PLO4	PLO5
CLO1	3	1	1	1	1
CLO2	2	2	2	1	2
CLO3	2	2	2	1	2
CLO4	2	2	2	1	2
CLO5	1	2	2	2	1
3 - Substantial (high)		**2** - Moderate (medium)		**1** - Slight (low)	

Allied - I: Numerical Techniques

Unit	Content	No. of Hours
I	**The Solution of Numerical Algebraic and Transcendental Equations:**Bisection Method – Iteration Method – Convergence Condition – Regula Falsi Method – Newton - Raphson Method- Newton–Raphson Method in Machine Learning Optimization.	12
II	**Solution of Simultaneous Linear Algebraic Equations:** Gauss Elimination Method - Gauss Jordan Method- Gauss Jacobi Method - Gauss Seidel Method**.**	12
III	**Numerical Differentiation:** Newton's Forward Difference - Newton's Backward Difference - Derivative using Stirling's Formula.	12
IV	**Numerical Integration:** Newton Cote's Formula- Trapezoidal Rule -Simpson's $1/3^{rd}$ and $3/8^{th}$ Rules.	12
V	**Numerical Solution of First Ordinary Differential Equation:** Taylor Series Method - Euler's Method - Modified Euler's Method- Runge Kutta Method (Second & Fourth Order Runge Kutta Method only).	12
	(Problems-100%) Total Hours	**60**
Text Book		
1.	P. Kandasamy, K.Thilagavathy & K. Gunavathi (2015)" Numerical Methods", S. Chand and Company Ltd, New Delhi. Unit I : Chapter 3 : Section 3.1 – 3.4 Unit II : Chapter 4 : Section 4.1, 4.2, 4.8, 4.9 Unit III: Chapter 9 : Section 9.1 – 9.4 Unit IV: Chapter 9 : Section 9.7 – 9.9, 9.13, 9.14 Unit V: Chapter 11 : Section 11.5, 11.6, 11.9, 11.11- 11.13	
Reference Books		
1.	K. Sankara Rao (2018), "Numerical Methods for Scientists and Engineers", Prentice Hall India.	
Web Resources (Swayam / NPTEL)		
1.	https://archive.nptel.ac.in/courses/111/107/111107105/	
2.	https://en.wikipedia.org/wiki/Newton%27s_method_in_optimization	

Part–IV: Ability Enhancement Compulsory Courses

Course Code	Course Name	Category	Hours/Week	Credits
26SOF1AE	Soft Skills	AECC-I	2	2

Course Objectives

The course intends to cover

- The essential soft skills that is crucial for success in today's dynamic and interconnected workplace.

Course Learning Outcomes

On the successful completion of the course, students will be able to

CLO	CLO Statements	Knowledge Level
CLO1	Understand the comprehensive skills to participate actively in conversation, writing short texts with expression	K1, K2, K3
CLO2	Infer the cohesive devices to describe and discuss any objects, pictures using compound, complex sentence forms.	K2, K3
CLO3	Comprehend the logic in the given situation to organize the ideas to write formal and informal letters.	K2, K3
CLO4	Understand the given material to organize it in a logical sequence to present a paragraph with main and supporting ideas with concluding sentences.	K3
CLO5	Present valuable ideas in conversation to emulate the main ideas and key points in short essays.	K3
K1 - Remember; **K2** - Understand; **K3** - Apply;		

Ability Enhancement Compulsory Course (AECC) - I: Soft Skills

Unit	Module	Details	No. of Hours
I		**Presentation Skills**	
	1	**Getting to Know You:** Grammar: Introduction to Tenses, Everyday English, Role-Play. Reading Activity: Different ways of communication. *Activities*: Fill in the blanks (Listening), Self Introduction (Speaking).	6
	2	**My Day:** Grammar: Present simple positive & negative/Adverbs of Frequency, Vocabulary & Speaking about Daily Activities. Listening: Observe and Answer/ Telling the time. *Activities:* Reading & Writing: Describe where you live.	
	3	**Your World:** Grammar: Possessive determiners. Listening: Positive & negative contractions. Reading & Writing: Personal profile. *Activities:* Talk about countries, nationalities (Vocabulary & Speaking).	
	4	**The World of Work:** Grammar: Yes/No & Wh Questions. Vocabulary & Speaking: Jobs. Listening: Recognize the schwa sound. *Activities:* Opening and closing an email (Reading & Writing).	
	5	**Places and Things:** Grammar: There is / there are, articles. Vocabulary & Speaking: Talk about rooms & furniture. Listening: Directions. Reading & Writing: Imperatives.	
	6	**24 Hours:** Grammar: Likes & Dislikes. Vocabulary & Speaking: Speak about hobbies and interests. Reading: Match the photos with descriptions. Writing: Write complete sentence using prompt. *Activities:* Observe & answer *(*Listening).	
		Practice: Listening & Speaking Presentations - Talking about how you learn – Understanding key information in a presentation – Writing sentences about you.	
II		**Confidence**	
	1	**Clothes and Shopping:** Grammar: Modal verbs/Adverbs of Frequency/Adjectives and Adverbs. Vocabulary & Speaking: Shopping. Reading & Writing: Product Review. *Activities:* Observe & answer *(*Listening).	6
	2	**Travel & Transport:** Grammar: Past simple questions. Vocabulary & Speaking: Talk about holidays. Listening: At the train station. *Activities:* Email - A perfect holiday (Reading & Writing).	
	3	**Health & Fitness:** Grammar: Past simple irregular verbs; Listening: Listen & Answer; Reading & Writing: Time sequencers; *Activities:* Talk about a healthy lifestyle (Vocabulary & Speaking)	
	4	**Music:** Grammar: Present perfect simple; Vocabulary & Speaking: Survey about music; Listening: Listen two people talk about music; *Activities:* Use adjectives and create sentences (Reading)	
	5	**Let's go shopping:** Vocabulary & Speaking: Town Survey; Listening: Listen and answer; Reading & Writing: Read and match; Activities: Countable & Uncountable **(**Grammar)	
		Practice: Writing a personal statement.	

Unit	Module	Details	No. of Hours
III		**Creativity**	
	1	**Cooking & Eating:** Grammar: Some & Any, Quantifiers. Vocabulary & Speaking about Food & Drink. *Activities* Kitchen conversation (Listening). Reading an article & answering.	6
	2	**Survival:** Grammar: Comparison of adjectives. *Activities* Describing people (Speaking and Vocabulary). Listening to an audio & Answering. Reading & Writing: Read and Answer.	
	3	**Working Together:** Grammar: Verb + Noun phrases. *Activities* Technology (Vocabulary & Speaking). Listening: Listen & Answer. Reading & Writing: Notice.	
	4	**Music:** Grammar: Present perfect simple. *Activities* Survey about music (Vocabulary & Speaking). Listen to two people talking about music (Listening). Reading: Use adjectives and create sentences.	
	5	**Culture and Arts:** Grammar: Present perfect.Vocabulary & Speaking activity: Speak on the phone. *Activities:* Listen and answer. Reading & Writing activity: Review.	
		Practice: Writing comparison sentences & paragraphs.	
IV		**Problem-Solving**	
	1	**Do's and Don'ts:** Grammar, Modal Verbs. *Activities* Roleplay (Speaking). Holidays in January (Listening). Reading an article & answering.	6
	2	**Body:** Grammar: First conditional. Vocabulary & Speaking about Personality & Appearance. *Activities* Conversations about personality (Listening), Reading & Writing: Read and Answer about your skills.	
	3	**Speed:** Grammar: Present simple passive. Vocabulary & Speaking about relationships. Listening: Listen & Answer. Reading and Error spotting.	
	4	**Work:** Grammar: Adverbs of manner. Vocabulary & Speaking about work advice. Listening: Observe & Answer; Reading: Read & check your ideas.	
		Practice: Writing argumentative and descriptive essays.	
V		**Critical Thinking**	
	1	**Influence:** Grammar: would / past habits. Listening: Sentence Correction. *Activities* Your inspiration (Speaking). Picture description (Reading).Rewrite the sentences (Writing).	6
	2	**Money:** Grammar: Second conditional. *Activities:* Radio programme (Listening). Talk about games (Speaking). Reading & Writing: Fill in the blanks.	
	3	**Things that changed the world:** Grammar: articles. *Activities* :Talk about chewing gum (Speaking & Listening). Reading & Writing: Read and write a book review.	
		Practice: Writing Emails, reports and proposals.	
		Total Hours	**30**

Components for Internal Assessment and Distribution of Marks for CIA and ESE (Theory)

Max Marks	Marks for		Components for CIA						
100	CIA	ESE	CIA		Model		Attendance	Active Engagement	Total
	25	75	Actual	Weightage	Actual	Weightage	5	5	25
			50	5	75	10			

Question Paper Pattern

Component	Duration in Hours	Section A			Section B			Section C			Total
		Type of Question	No. of Questions	Marks	Type of Question	No. of Questions	Marks	Type of Question	No. of Questions	Marks	
CIA	2	MCQ	8	8x1=8	Either or	3	3x6=18	Either or	3	3x8=24	50
Model Exam / **ESE**	3	MCQ	10	10x1=10	Either or	5	5x5=25	Either or	5	5x8=40	75

Components for Internal Assessment and Distribution of Marks for CIA (Lab)

Max Marks	Marks for		Components for CIA						
	CIA	ESE	Test		Model		Experiments / Programs	Observation	Total
100	40	60	Actual	Weightage	Actual	Weightage	Marks	5	40
			50	10	60	15	10		

Examination Pattern

Component	Duration in Hours	Marks			Weightage
		Practical Exam	Record	Total Marks	
Test	2	50	-	**50**	10
Model	3	60	-	**60**	15
Experiments Completed	-	-	-	**10**	10
Observation Note	-	-	-	**05**	05
				Total Marks - CIA	**40**
ESE	3	50	10	-	**60**

Components for Internal Assessment and Distribution of Marks for CIA (Foundation Course -Theory)

Max Marks	Marks for		Components for CIA				
50	CIA	ESE	CIA		Model		Total
			Actual	Weightage	Actual	Weightage	
	50	-	50	25	50	25	50

Question Paper Pattern

Duration in Hours	Mode of Exam	Type of Questions	No. of Questions	Marks
2	Offline	Open Choice	5 (Out of 8)	5 x 10=50

Components for and Distribution of Marks for ESE (Theory) Ability Enhancement Compulsory Courses (AECC) & Question Paper Pattern

Duration in Hours	Mode of Exam	Type of Questions	No. of Questions	Marks
2	Online	MCQ	50	50x1=50