University of Madras

Chepauk, Chennai 600 00 5

[Est. 1857, State University, NAAC 'A[++]' Grade, C GPA 3.59, NIRF 2019 Rank: 20]
Website: www.unom.ac.in, Tel. 044 - 2539 9 561

Undergraduate Programme

i n

COMPUTER SCIENCE

Bachelor of COMPUTER SCIENCE (With effect from the Academic Year 2023 -24)

Learning Outcome Based Curriculum Framework

Note: The Board of Studies is designed Learning Outcome s Based Curriculum Framework of Under Graduate COMPUTER SCIENCE Programme prescribed by UGC

INDEX

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Undergraduate Programme

in

Computer Science

Syllabus for
B.Sc Computer Science
(With effect from the Academic Year   2023 -24)

Learning Outcome Based Curriculum Framework

Note: The Board of Studies is designed Learning Outcomes Based Curriculum Framework of Under Graduate Computer Science Programme prescribed by UGC

1

Syllabus for B.Sc. Computer Science
(With effect from the Academic Year 2023-24)

I Preamble

Bachelor of Computer Science is a 3 – Year under Graduate Programme spread over six semesters. The course is designed to achieve high degree of technical skills in Problem solving and application development. The course develops requisite professional skills and problem solving abilities for pursuing a successful career in software industry and forms the required basics for pursuing higher studies in Computer Science.

II Eligibility

A pass in the Higher secondary Examination (Academic Stream) conducted by the Government of Tamil Nadu with Mathematics as one of the subjects.

III Programme Objectives

PO1	Scientific aptitude will be developed in Students
PO2	Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the Computer Science & humanities stream.
PO3	Students will become employable; Students will be eligible for career opportunities in education field, Industry, or will be able to opt for entrepreneurship.
PO4	Students will possess basic subject knowledge required for higher studies, professional and applied courses.
PO5	Students will be aware of and able to develop solution-oriented approach towards various Social and Environmental issues.
PO6	Ability to acquire in-depth knowledge of several branches of Computer Science and aligned areas. This Programme helps learners in building a solid foundation for higher studies in Computer Science and applications.
PO7	The skills and knowledge gained leads to proficiency in analytical reasoning, which can be utilized in modelling and solving real life problems.
PO8	Utilize computer programming skills to solve theoretical and applied problems by critical understanding, analysis and synthesis.
PO9	Ability to share ideas and insights while seeking and benefitting from knowledge and insight of others.
PO10	Mould the students into responsible citizens in a rapidly changing interdependent society.

IV Programme Specific Objectives

PSO1	Think in a critical and logical based manner
PSO2	Familiarize the students with suitable software tools of computer science and industrial applications to handle issues and solve problems in mathematics or statistics and realtime application related sciences.
PSO3	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively usethat information for the issue or problem at hand.
PSO4	Understand, formulate, develop programming model with logical approaches to Address issues arisingin social science, business and other contexts.
PSO5	Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of Computer science and Industrial statistics.
PSO6	Provide students/learners sufficient knowledge and skills enabling them to undertake further studies inComputer Science or Applications or Information Technology and its allied areas on multiple disciplines linked with Computer Science.
PSO7	Equip with Computer science technical ability, problem solving skills, creative talent and power of communication necessary for various forms of employment.
PSO8	Develop a range of generic skills helpful in employment, internships& societal activities.
PSO9	Get adequate exposure to global and local concerns that provides platform for further exploration into multi-dimensional aspects of computing sciences.
PSO10	The state of art technologies in conducting a Explain in a scientific and systematic way and arriving at a precise solution is ensured

B.Sc. Computer Science - COURSE STRUCTURE
YEAR – I   SEMESTER – I

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-I	3	6	25	75	100
Part-II	100L1Z	English Paper-I	3	6	25	75	100
Part-III	125C1A	CC- I: Python Programming **@#$%&**	5	4	25	75	100
	125C11	CC- II: Python Programming Practical **@#$%&**	5	5	40	60	100
	125E1A 125E1B	EC - I Generic / Discipline Specific (Any one): Mathematics I **@#$%& /** Statistics I **@#$%& /**	3	5	25	75	100
	125E1C	Physics I **#$%**	2	3	25	75	100
	---	Physics-I Practical **#$%**	---	2	---	---	---
Part-IV	125S1A	SEC - I: Office Automation **@#$%&** *	2	2	25	75	100
	100S1A	Basic Tamil-I (Other Language Students) *					
	100S1B	Advanced Tamil-I (Other Language Students) *					
	125B1A	FC: Fundamentals of Computers **@#$%&**	2	2	25	75	100
			22/23	30			

* PART-IV: SEC-1 / Basic Tamil / Advanced Tamil (Any one)

1. Students who have studied Tamil upto XII STD and also have taken Tamil in Part I shall take SEC-I.
2. Students who have not studied Tamil upto XII STD and have taken any Language other than Tamil in Part-I shall take Basic Tamil comprising of Two Courses (level will be at 6th Std.).
3. Students who have studied Tamil upto XII STD and have taken any Language other than Tamil in Part-I shall take Advanced Tamil comprising of Two Courses.

YEAR – I   SEMESTER – II

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-II	3	6	25	75	100
Part-II	100L2Z	English Paper-II	3	6	25	75	100
Part-III	125C2A	CC-III: Introduction to Computer Architecture and Microprocessor **$**	5	4	25	75	100
	125C21	CC - IV: Introduction to Computer Architecture and Microprocessor Practical **$**	5	5	40	60	100
	125E2A 125E2B	EC-II Generic / Discipline Specific: Mathematics II **@#$%&/** Statistics II **@#$%&/**	3	5	25	75	100
	125E2C	Physics II **#$%**	2	3	25	75	100
	125E21	Physics I & II (Practicals) **#$%**	2	2	40	60	100
Part-IV	125S2A	SEC- II: Quantitative Aptitude **@#$%&** *	2	2	25	75	100
	100S2A	Basic Tamil-II (Other Language Students) *					
	100S2B	Advanced Tamil-II (Other Language Students) *					
	125S2B	SEC- III: Problem Solving Techniques **$**	2	2	25	75	100
			23/24	30			

YEAR – II   SEMESTER – III

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-III	3	6	25	75	100
Part-II	200L3Z	English Paper-III	3	6	25	75	100
Part-III	225C3A	CC - V: Java Programming **@#$%&**	5	4	25	75	100
	225C31	CC - VI: Java Programming Practical **@#$%&**	5	5	40	60	100
	225E3A 225E3B 225E3C	EC-III Generic / Discipline Specific: Mathematics I **@#$%&**/ Statistics I **@#$%&**/	3	5	25	75	100
		Physics I **#$%**	2	3	25	75	100
	---	Physics-I Practical **#$%**	---	2	---	---	---
Part-IV	225S31	SEC- IV: (Entrepreneurial Based): Web Page Design Practical **@#$%&**	1	1	40	60	100
	225S32	SEC- V: Desktop Publishing Practical **@#$%&**	2	2	40	60	100
	----	Environmental Science	--	1	--	--	--
			21/22	30			

YEAR – II   SEMESTER – IV

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part-I	----	Language Paper-IV	3	6	25	75	100
Part-II	200L4Z	English Paper-IV	3	6	25	75	100
Part-III	225C4A	CC - VII: Data Structures and Algorithms **$**	5	4	25	75	100
	225C41	CC -VIII: Data Structures and Algorithms Practical **$**	5	4	40	60	100
	225E4A 225E4B 225E4C	EC-IV Generic / Discipline Specific : Mathematics II **@#$%&**/ Statistics II **@#$%&**/	3	5	25	75	100
		Physics II **#$%**	2	3	25	75	100
	225E41	Physics I & II (Practicals) **#$%**	2	2	40	60	100
Part-IV	225S4A	SEC -VI: Emotional Intelligence **@#$%&**	2	2	25	75	100
	225S4B	SEC -VII: Technical Writing **@#$%&**	2	2	25	75	100
	---	Environmental Science	2	1	25	75	100
			25/26	30			

YEAR – III   SEMESTER – V

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part- III	325C5A	CC - IX: Operating System **@$**	3	5	25	75	100
	325C51	CC - X: Operating System Practical **$**	5	5	40	60	100
	325C5B	CC - XI: Relational Database Management System **@#$**	4	5	25	75	100
	325C52	CC-XII: Relational Database Management System Practical **#$**	4	5	40	60	100
	325E5A 325E5B 325E5C	EC-V: Computer Networks **#$%&**/ Mobile Ad-hoc Network **@#$%&** / Data Mining and Warehousing **@#$%&**	3	4	25	75	100
	325E5D 325E5E 325E5F	EC -VI: Software Engineering **@#$%&** / Software Testing **$** / Digital Image Processing **$**	3	4	25	75	100
Part-IV	---	Value Education	2	2	25	75	100
	---	Internship / Industrial Training (During summer vacation at the end of IV semester)	2	--	--	--	--
			26	30			

YEAR – III   SEMESTER – VI

Part	Sub. Code	List of Courses	Credit	Hrs	Int.	Ext.	Total
Part- III	325C6A	CC- XIII: Programming in ASP.NET **#$**	4	6	25	75	100
	325C61	CC- XIV: Programming in ASP.NET Practical **#$**	4	6	40	60	100
	325C62	CC - XV: Project with Viva voce **#$**	4	6	40	60	100
	325E6A 325E6B 325E6C	EC -VII: Artificial Intelligence **$** / Introduction To Data Science **@#$** / Internet of Things and its Applications **@#$%&**	3	5	25	75	100
	325E6D 325E6E 325E6F	EC -VIII: Cloud Computing **@#$%&** / Big Data Analytics **@#$%&** / Block Chain Technology **$**	3	5	25	75	100
Part-IV	325S61	Professional Competency Skill Course: Advanced Excel Practical **#$**	2	2	40	60	100
Part-V	---	Extension Activity	1	--	--	--	--
			21	30			

@ - Common to B.C.A.

 # - Common to B.Sc. Software Applications

$ - Common to B.Sc. Computer Science

% - Common to B.Sc. Computer Science with Artificial Intelligence

& - Common to B.Sc. Computer Science with Data Science

-X-X-X-

செ ன்னைப் பல்கலைக்கழகம்
University of Madras

Part-I

பொதுத் தமிழ் - பாடத்திட்டம்

General Tamil - Syllabus

4 பருவங்கள் (முதல் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

பொதுத்தமிழ்-1

தமிழ் இலக்கிய வரலாறு -1

முதலாம் ஆண்டு – முதற் பருவம்

Course Code	Course Name	category	L	T	P	S	Credits	Ins.Hrs	CIA	Externa	Total
100L1AU	பொதுத்தமிழ் -1 தமிழ் இலக்கிய வரலாறு -1	Supportive	Y	-	-	-	3	6	25	75	100

Learning Objectives

- முதலாமாண்டுப் பட்ட வகுப்பு மாணவர்களுக்குத் தமிழ் மொழி இலக்கியங்களை அறிமுகம் செய்தல்
- தமிழ் இலக்கியப் போக்குகளையும், இலக்கணங்களையும் மாணவர் அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்

Expected Course Outcomes

On the Sucessful completion of the Course, Students will be able to

இப்பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	சங்க இலக்கியத்தில் காணப்பெறும் வாழ்வியல் சிந்தனைகளை அறிந்து கொள்வர்	K4
CO 2	அற இலக்கியம் மற்றும் தமிழ் காப்பியங்களின்வழி வாழ்வியல் சிந்தனையைப் பெறுவர்	K5, K6
CO 3	பக்தி இலக்கியங்களைக் கற்பதன் மூலம் பக்தி நெறியினையும், பகுத்தறிவு இலக்கியங்களைக் கற்பதன் வழி நல்லிணக்கத்தையும் தெரிந்து பின்பற்றுவர்	K3
CO 4	மொழியறிவோடு சிந்தனைத்திறனைப் பெறுவர்	K3
CO 5	மொழிப்பயிற்சிக்குத் தேவையான இலக்கணங்களைக் கற்பர்.	K2

K1 - Remember; K2 - Undestand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

அலகு-1	தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம்.

1. இலக்கணம்;

அ.தொல்காப்பியம், இறையனார் களவியல் உரை , நம்பியகப் பொருள், புறப்பொருள் வெண்பா மாலை, நன்னூல், தண்டியலங்காரம், யாப்பருங்கலக்காரிகை- நூல்கள்

ஆ.மொழிப் பயிற்சி- ஒற்றுப்பிழை தவிர்த்தல்

- வல்லினம் மிகும் இடங்கள்
- வல்லினம் மிகா இடங்கள்

- ஈரொற்று வரும் இடங்கள்
- ஒரு, ஓர் வரும் இடங்கள்
- அது, அஃது வரும் இடங்கள்
- தான், தாம் வரும் இடங்கள்

பயிற்சி : வல்லினம் மிகும் இடங்கள், மிகா இடங்கள் தவறாக வரும்வகையில் ஒரு பத்தி கொடுத்து ஒற்றுப் பிழை திருத்தி எழுதச் செய்தல்.

2. சங்க இலக்கியம் - எட்டுத்தொகை, பத்துப்பாட்டு
3. அற இலக்கியம்-பதினெண்கீழ்கணக்கு நூல்கள்
4. காப்பிய இலக்கியம் - ஐம்பெரும் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், சமயக் காப்பியங்கள்
5. பக்தி இலக்கியமும் (பன்னிரு திருமுறைகள், நாலாயிர திவ்வியப் பிரபந்தம் -- பகுத்தறிவு இலக்கியமும் (சித்தர் இலக்கியங்கள், புலவர் குழந்தையின் இராவண காவியம்)

அலகு-2	சங்க இலக்கியம்

எட்டுத்தொகை ;எ

1. நற்றிணை-முதல் பாடல் -நின்ற சொல்லர்
2. குறுந்தொகை 3 ஆம் பாடல் -நிலத்தினும் பெரிதே
3. ஐங்குறுநூறு –நெல் பல பொலிக! பொன் பெரிது சிறக்க!' (முதல் பாடல்)-வேட்கைப் பத்து
4. கலித்தொகை- 51 - சுடர்த்தொடிஇக் கேளாய் -குறிஞ்சிக் கலி
5. புறநானூறு -189 தெண்கடல் வளாகம் பொதுமையின்றி, நாடா கொன்றோ -187

பத்துப்பாட்டு;

1. முல்லைப்பாட்டு (முழுவதும்)

அலகு-3	அற இலக்கியம்

1.திருக்குறள் -அறன் வலியுறுத்தல் அதிகாரம்

2.நாலடியார்-பாடல்: 131 (குஞ்சியழகும்)

3.நான்மணிக்கடிகை-நிலத்துக்கு அணியென்ப

4.பழமொழி நானூறு- தம் நடை நோக்கார்

5.இனியவை நாற்பது- 37. இளமையை மூப்பு என்று

அலகு-4	காப்பிய இலக்கியம்

1. சிலப்பதிகாரம் – வழக்குரைகாதை
2. மணிமேகலை- பாத்திரம் பெற்ற காதை
3. பெரியபுராணம் - பூசலார் நாயனார்புராணம்
4. கம்பராமாயணம்- குகப் படலம்
5. சீறாப்புராணம் – மானுக்குப் பிணை நின்ற படலம்

6. இயேசு காவியம் -ஊதாரிப்பிள்ளை

அலகு-5	பக்தி இலக்கியமும், பகுத்தறிவு இலக்கியமும்

பக்தி இலக்கியம்;

1. திருநாவுக்கரசர் தேவாரம் - நாமார்க்கும் குடியல்லேம் எனத் தொடங்கும் பாடல் மட்டும்
2. மாணிக்கவாசகர் திருவாசகம் - நமச்சிவாய வாஅழ்க நாதன்தாள் வாழ்க முதல் சிரம்குவிவார் ஓங்குவிக்கும் சீரோன் கழல் வெல்க வரை
3. பொய்கையாழ்வார்-வையந் தகளியா வார்கடலே
4. பூதத்தாழ்வார்-அன்பே தகளியா
5. பேயாழ்வார்-திருக்கண்டேன் பொன்மேனி கண்டேன்
6. ஆண்டாள் – திருப்பாவை மார்கழித் திங்கள் (முதல் பாடல்)

பகுத்தறிவு இலக்கியம்;

- திருமூலர் – திருமந்திரம் (270,271, 274, 275 285)
- பட்டினத்தார் -திருவிடை மருதூர் (காடே திரிந்து – எனத் தொடங்கும் பாடல் பா.எண ;.279, 280)
- கடுவெளி சித்தர் - *பாபஞ்செய் யாதிரு மனமே* (பாடல் முழுவதும்)
- இராவண காவியம் – தாய்மொழிப் படலம் - 18. ஏடுகை யில்லா ரில்லை முதல் - 22. செந்தமிழ் வளர்த்தார். வரை

Text books
• .

Reference Books
• மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அக்காதெமி, புதுடெல்லி.
• மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
• தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
• தமிழ் இலக்கிய வரலாறு –முனைவர்.சிற்பி பாலசுப்ரமணியம், முனைவர்.சொ.சேதுபதி
• புதிய தமிழ் இலக்கிய வரலாறு– முனைவர்.சிற்பி பாலசுப்ரமணியம்,நீல.பத்மநாபன்
• தமிழ் இலக்கிய வரலாறு - டாக்டர்.அ.கா.பெருமாள்
• தமிழ் இலக்கிய வரலாறு –முனைவர். ப.ச.ஏசுதாசன்
• தமிழ் இலக்கிய வரலாறு – ஸ்ரீ குமார்
• வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு–பாக்கியமேரி
• தமிழ் பயிற்றும் முறை, பேராசிரியர் ந. சுப்புரெட்டியார் - மணிவாசகர் பதிப்பகம், சிதம்பரம்

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]
Web Sources

- https://www.chennailibrary.com/
- https://www.sirukathaigal.com
- https://www.tamilvirtualuniversity.org
- https://www.noolulagam.com
- https://www.katuraitamilblogspot.com

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2	1.
CLO1	3	2	3	3	3	2	2	2	3	2	3	2	
CLO2	3	3	2	2	2	3	2	3	3	2	2	2	
CLO3	3	2	3	3	2	2	2	3	2	3	3	2	
CLO4		3	3	2	2	2	3	2	3	2	3	3	
CLO5	3	3	2	2	2	3	3	2	2	2	3	3	

Strong -3,Medium-2,Low-1

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
EXISTING SYLLABUS (22-23) FOLLOWED FOR THE ACADEMIC YEAR 2023-2024

FOUNDATION COURSE: PART-I HINDI PAPER-I

100L1E

Inst.Hrs. : 6
Credits   : 3

Year   : I
Semester : I

Programme:	U.G. – FOUNDATION COURSE – PART-I HINDI	
Programme Outcomes:	1. Identify the literary trends, prose forms and nature of functional Hindi and its applications 2. Understand the roll of literature and importance of Functional Hindi 3. Obtain the practical knowledge of critical study of Literature, thinking, writing and expressional skills. 4. Obtain official noting, drafting and Business and personal, semi official letter writing methods and techniques 5. Employ the evaluating, summerising and differentiate contextual meanings.	
Programme Specific Outcomes:	1. Basic knowledge for higher studies 2. Obtain Basic professional skills i.e. business and official Correspondence and applications 3. Language application and writing skills 4. Basic idea of evaluation critical and analytical study of literature. 5. Develops ideas of creative thinking and writing	

Course Objectives	1. Identify the theme and aims of prose lessons and functional Hindi	K1
	2. Understand and summarise the theme	K2
	3. Explain the ideology of literary works and writers	K3
	4. Interpret the contextual meaning and differentiation	K4
	5. Evaluate on the basis of elements, features and trends of prose	K5
	6. Conceive the knowledge of literary themes and practice of functional Hindi	K6
Title of the Course:	PAPER – I - PROSE, FUNCTIONAL HINDI & LETTER WRITING	
Pre-requisites, if any:	Basic Knowledge of Hindi Prose forms and prose writers	
UNITS		
I	1. Sabhyata ka Rahasya 2. Personal Applications 3. Leave Letters 4. Introduction to office procedures 5. Official letter 6. Demi Official Letter	
II	1. Mitrata 2. Letter to the Editor 3. Opening an A/C	

	4. Demi Official Letter
	5. Office Order
	6. Administrative Terminology English to Hindi (30 Words)
III	1. Yuvavon Se
	2. Application for Withdrawal
	3. Circular
	4. Memo
	5. Enquiry
	6. Administrative Terminology Hindi to English (30 Words)
IV	1. Paramanu Oorja evam Khadya Padarth Sanrakshan
	2. Transfer of an A/C
	3. Missing of Pass Book / Cheque Leaf
	4. Official Memo
	5. Resolution and Notice
	6. Administrative Terminology English to Hindi (30 Words)
V	1. Yougyata aur Vyavasay ka Chunav
	2. Complaints
	3. Ordering for Books
	4. Notification
	5. Official Noting Hindi to English (25 Phrases)
	6. Official Noting English to Hindi (25 Phrases)

Course Outcomes	1. Explains the nature, features, elements of prose forms and Functional Hindi
	2. Understand the theme, aim of lessons and obtain application skills.
	3. Evaluate the thought, ideology, expressional and artistic skills of writers.
	4. Obtain skills of critical analysis of Literary forms and drafting skills of personal letters, business letters, noting and drafting skills
	5. Learn to Employ the obtained skills in enriching the bright future.

Reading List (Print and Online)	1. Sarkari karyalayon mein Hindi ka Prayog, Written by Gopinath Srivatav, Lokbharati Prakashan, 15,A, Gandhi Mrag, Allabad – 1
	2. Hi.wikypedia.org/wiki.आधुनिक_हिन्दी_गद्य _ का_इतिहास
	3. https://www.infosrf.com/blog-single.php?MnBv=494

Recommended Texts	• HINDI GADHYA MALA
	  Ed. by Dr. Syed Rahamathulla, Poornima Prakashan
	     4/7-B, Begum III Street, Royapettah, Chennai – 14.
	• Karyalayeen Tippaniya :Kendriya Hindi Sansthan, Agra
	• Prayojan Moolak Hindi : Dr. Syed Rahamathulla, Poornima Prakashan, 4/7, Begum III Street, Royapettah, Chennai – 14

Method of Evaluation:

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
EXISTING SYLLABUS (22-23) FOLLOWED FOR THE ACADEMIC YEAR 2023-2024

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

	POS1	POS 2	POS 3	POS 4	POS 5
CO 1	S	S	M	S	M
CO 2	S	S	S	S	S
CO 3	S	S	S	S	S
CO 4	S	S	S	S	S
CO 5	S	S	S	S	S

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

Programme:	**I & II UG – Second Language - SANSKRIT**
Programme Code:	**BFC-LS22**
Duration:	**2 years**
Programme Outcomes:	After successful completion of the course, learners will be able to: 1. Create simple sentences using different grammatical tenses 2. Sensitize the students to the functioning of the language 3. Know the historical and cultural perspective of literary trends and movements in Sanskrit and in its literature 4. Define the origin of Sanskrit Literature 5. Demonstrate different teaching methodologies 6. Translate simple passages 7. Consolidate their communication skills in both spoken and written Sanskrit.
Programme Specific Outcomes:	1. Understand and appreciate the aesthetical, social, political, cultural, etc., values expressed in various prescribed texts 2. Apply different grammatical rules to their reading and writing assignments 3. Identify the base words of nouns and different tenses 4. Read, understand, write and speak in simple Sanskrit 5. Translate simple sentences related to the themes given

List of Courses:

Semester	Course Code	Title of the Course	Core/Elective/ Soft Skill	Credits
I	BFC-LS001	Paper I – Poetry, Grammar and History of Sanskrit Literature	C	3
II	BFC-LS002	Paper II – Prose, Grammar and History of Sanskrit Literature	C	3
III	BFC-LS003	Paper III – Drama, Grammar and History of Sanskrit Literature	C	3
IV	BFC-LS004	Paper IV – Alankara, Didactic & Modern literatures and Translation	C	3

UNIVERSITY OF MADRAS

UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE

SYLLABUS WITH EFFECT FROM 2022-2023

EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

100L1G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-I

Inst.Hrs. : 6		**Year** : I	
Credits : 3		**Semester** : I	

Paper I – Poetry, Grammar and History of Sanskrit Literature

Course Outcomes	1. Remember the usage of grammatical tenses in constructing sentences in dialogue. 2. Apply the rules of usage in practice exercises and identify errors 3. Explain the nuances in the usage of various grammatical tenses and aspects 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in French 5. Communicate in French and summarize the given text

Course Objectives	Understand the basic Sanskrit sentence structure	K1
	To provide the glimpses of the rich Sanskrit literary tradition through reading the literary composition	K2
	Explain the language of this Mahakavya which is highly elaborate and polished with continual play upon words and variety of metres	K3
	Analyse and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate grammatical nature of verses	K5

Units	
I	Introduction to Sanskrit (Alphabets, Two letter words and three letter words) Grammar: *akārāntaḥ puṁliṅgaḥ śabda-s* - 1. बाल (*Bāla*) and 2. देव (*Deva*) *ākārāntaḥ strīliṅgaḥ śabda-s* - 1. बाला (*Bālā*) and 2. लता (*Latā*) *akārāntaḥ napuṁsakaliṅgaḥ śabda-s* - 1. फल (*Phala*) and 2. वन (*Vana*)
II	Introduction to *Rāmāyana, Kālidāsa* and his poetic works Text: *Raghuvaṁśa* (Canto I) Verses 1-15
III	Introduction to the works of *Bhāravi* - Text: *Raghuvaṁśa* (canto I) Verses 16-30
IV	Introduction to the works of *Śrī Harṣha* - Text: *Raghuvaṁśa* (Canto I) Verses 31-45
V	Grammar: Conjugations - *Laṭ lakāra-s* – (Present tense) (i) गच्छति (*Gacchati*) (ii) तिष्ठति (*Tiṣṭhati*) (iii) पठति

2

	(*Paṭhati*) (iv) नृत्यति (*Nṛtyati*) (v) कुप्यति (*Kupyati*) (vi) कथयति (*Kathayati*) (vii) गणयति (*Gaṇayati*) (viii) अस्ति (*Asti*) (ix) करोति (*Karoti*) (x) शृणोति (*Śṛṇoti*) Indeclinables (Avyayaani) - अपि (*api*), कदा (*kadā*), च (*ca*), अद्य (*adya*), विना (*vinā*), सह (*saha*), तत्र (*tatra*), किम् (*kim*), यदि (*yadi*) - तर्हि (*tarhi*), यथा (*yathā*) - तथा (*tathā*) Prefixes (*Upasargas*) - आङ् (*āṅ*), वि (*vi*), परि (*pari*), अनु (*anu*), अधि (*adhi*), उत् (*ut*), प्रति (*prati*), उप (*upa*), प्र (*pra*) निर् (*nir*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - I* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	M	S	S
CO 2	S	S	S	S	S
CO 3	S	S	M	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

100L2G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-II

Inst.Hrs. : 6	**Year : I**
Credits : 3	**Semester : II**

Paper II – Prose, Grammar and History of Sanskrit Literature

Course Outcomes	1. Understand and apply grammatical concepts in drafting sentences and paragraphs 2. Apply the rules and regulations in handling usage of Lrt lakara and Asmad Sabdah, practice exercises and identify errors 3. Form an idea of the aesthetic expressions that make Sanskrit composition get the position of pride in world literature 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in Sanskrit 5. Appreciate the art of employment of Alankaras in a prose form of poetry	
Course Objectives	Provide acquaintance with prose literature in Sanskrit through a study of one of the best texts of prose, which would pave the way for gaining sufficient grounding in the language	K1
	Enumerate various grammatical tenses and use them to communicate in Sanskrit language	K2
	Summarize the stories of Panchatantra and discuss in	K3
	Analyze and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate and comprehend text passages	K5
Units		
I	Introduction to Prose literature in Sanskrit Grammar: *ikārāntaḥ puṁliṅgāḥ śabdāḥ* - 1. कवि (*Kavi*) and 2. रवि (*Ravi*) *ikārāntaḥ strīliṅgaḥ śabdaḥ* - 1. मति (*Mati*) *īkārāntaḥ strīliṅgaḥ śabdaḥ* - 1. नदी (*Nadī*) *ikārāntaḥ napuṁsakaliṅgaḥ śabdaḥ* 1. वारि (*Vāri*)	
II	Introduction to *Māhābhārata,* the author of बालरामायणम् *(Balarāmāyaṇam)* and his works Text: *Bālakāṇḍam* of *Balarāmāyaṇam*	
III	Introduction to the works of *Baṇa* (*Kādambarī* and *Harṣacaritam*), *Daṇḍin* (*Daśakumāracaritam* and *Avantisundarīkathā*) and *Subandhu* (*Vāsavadattā*)	
IV	Introduction to Historical *Kāvyas* in Sanskrit - The works of *Kalhaṇaḥ, Bilhaṇaḥ, Bāṇaḥ* and *Pravarasenaḥ*	

4

V	Grammar: Conjugations - *Laṅ lakāraḥ* (Past tense) (i) अगच्छत् (*Agacchat*) (ii) अतिष्ठत् (*Atiṣṭhat*) (iii) अपठत् (*Apaṭhat*) (iv) अनृत्यत् (*Anṛtyat*) (v) अकुप्यत् (*Akupyat*) (vi) अकथयत् (*Akathayat*) (vii) अगणयत् (*Agaṇayat*) (viii) आसीत् (*Asīt*) (ix) अकरोत् (*Akarot*) (x) अशृणोत् (*Aśṛṇot*) Indeclinables: (a) तुमुन् (*Tumun*) suffix ended words (Infinitive forms) (i) गन्तुम् (*Gantum*) (ii) स्थातुम् (*Sthātum*) (iii) पठितुम् (*Paṭhitum*) (iv) नर्तितुम् (*Nartitum*) (v) कोपितुम् (*Kopitum*) (vi) कथयितुम् (*Kathayitum*) (vii) गणयितुम् (*Gaṇayitum*) (viii) भवितुम् (*Bhavitum*) (ix) कर्तुम् (*Kartum*) (x) श्रोतुम् (*Śrotum*) (b) क्त्वा (*Ktvā*) suffix ended words (Past passive participles) (i) गत्वा (*Gatvā*) (ii) स्मृत्वा (*Smṛtvā*) (iii) गणयित्वा (*Gaṇayitvā*) (iv) पठित्वा (*Paṭitvā*) (v) कृत्वा (*Kṛtvā*) (c) ल्यप् (*Lyap*) suffix ended words (Past passive participles) (i) आगत्य (*Āgatya*) (ii) विस्मृत्य (*Vismṛtya*) (iii) विगणय्य (*Vigaṇayya*) (iv) प्रपठ्य (*Prapaṭhya*) (v) अनुकृत्य (*Anukṛtya*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - II* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**
CO 1	S	M	S	M	S
CO 2	S	M	S	S	S
CO 3	S	S	S	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

5

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L3G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-III

Inst.Hrs. : 6   **Year   : II**
Credits   : 3   **Semester : III**

Paper III – Drama, Grammar and History of Sanskrit Literature

Course Outcomes	1. Be familiar with the style of the great Sanskrit Dramatist Bhasa 2. Be able to appreciate the aesthetical, social, political, cultural, etc., values expressed in prescribed composition 3. Understand the structural patterns of Sanskrit dramatic composition 4. Develop the finer and minor nuances of Nataka form of drama 5. Analyze the literary texts
UNITS	
I	Introduction to Dramaturgy – Ten types of Drama - Characteristics and features (*Nāndī, Sūtradhāra, Sthāpanā* and *Bharatavākyam*) of Sanskrit Dramas. Prose Text: *Karṇabhāram* - Page. 01 - 10 (till 10 *Slokās*)
II	Characteristics and features (*Vastu, Netā* and *Rasas*) of Sanskrit Drama - Prose Text: *Karṇabhāram* - Page. 11 - 20 (till 17 *Slokās*)
III	Authorship of 13 Trivandrum play of *Bhāsa* - Introduction to the Dramas of *Kālidāsa, Bhavabhūti, Harṣavardhana* and *Rājaśekhara* Text: *Karṇabhāram* - Page. 21 - 32 (Upto the end)
IV	Introduction to the dramatic works of *Viśākhadatta, Śūdraka, Bhaṭṭanārāyaṇa* and *Murāri* - Introduction to Allegorical dramas 1. *Prabodhacandrodaya* and 2. *Saṅkalpasūryodaya*
V	Introduction to *Campū* literature 1. *Bhojacampū* 2. *Viśvaguṇādarśacampū* and 3. *Nalacampū* Grammar – *Lṛṭ lakārāḥ* (Future tense) (i) गमिष्यति (*Gamiṣyati*) (ii) स्थास्यति (*Sthāsyati*) (iii) पठिष्यति (*Paṭhiṣyati*) (iv) नर्तिष्यति (*Nartiṣyati*) (v) कोपिष्यति (*Kopiṣyati*) (vi) कथयिष्यति (*Kathayiṣyati*) (vii) गणयिष्यति (*Gaṇayiṣyati*) (viii) भविष्यति (*Bhaviṣyati*) (ix) करिष्यति (*Kariṣyati*) (x) श्रोष्यति (*Śroṣyati*) Declensions: (*Sarvanāmaśabdāḥ*) - 1. तद् शब्दः (*Tad śabdaḥ*) in all genders 2. अस्मद् शब्दः (*Asmad śabdaḥ*) 3. युष्मद् शब्दः (*Yuṣmad śabdaḥ*)

Course Objectives	Understand the structure and use of different phrases and Idioms in Sanskrit Drama and grammatical aspects of *Karṇabhāram*	K2
	Enhance one's ability to converse freely in the language, which is considered to be a specialized skill as far as the Sanskrit Language goes	K2
	Draft and summarize the literary texts	K3
	Identify and apply different grammatical peculiarities	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - III* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	M	S	S
CO 2	S	S	S	S	S
CO 3	S	M	M	S	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

7

UNIVERSITY OF MADRAS

UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L4G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-IV

Inst.Hrs. : 6　　　　　　　　　　　　　　　　　　**Year : II**
Credits : 3　　　　　　　　　　　　　　　　　　　**Semester : IV**

Paper IV – Alankara, Didactic & Modern literatures and Translation

Course Outcome	1. Apply the usage of compound words 2. Differentiate the alankaras 3. Translate the prose passages prescribed 4. Identify and apply different grammatical tenses of "Mahabharata" related translation 5. Analyze and critically assess the literary texts
UNITS	
I	Introduction to Didactic literature (*Pañcatantram* and *Hitopadeśaḥ*) Text: The lion and the hare शशकसिंहकथा (*Śaśakasiṃhakathā*) from Pañcatantram and The jackal and the elephant शृगालहस्तिकथा (*Śṛgālahastikathā*) a story from *Mitralābhaḥ* of *Hitopadeśaḥ*
II	*Alaṅkārāḥ* - i. Upamā, ii. Rūpakam, iii. Ullekhaḥ, iv. Utprekṣā and v. Vyatirekaḥ
III	Introduction to Modern literature - Introduction to अर्थशास्त्रम् (*Artha śāstram*) of चाणक्यः (*Cāṇakyaḥ*) - Introduction to मयमतम् (*Mayamatam*) - Introduction to नीतिद्विषष्टिका (*Nītidviṣaṣṭhikā*) - *Slokās* - 1 to 10 - Introduction to the life history of श्रीआदिशङ्कराचार्यः (*Śrī -Ādi śaṅkarācāryaḥ*), श्रीरामानुजाचार्यः (*Śrī Rāmānujācāryaḥ*) and श्रीमध्वाचार्यः (*Śrī Madhvācāryaḥ*)
IV	Introduction to Modern literature in Sanskrit - Text: तिरुक्कुरळ् संस्कृतानुवादः (Sanskrit translation of Tirukkural) *Slokās* 1 to 10 ईश्वरवन्दनम् (*Kaḍavuḻ Vāzhththu*) by कलियन् रामानुजजीयर् (*Kaliyan Rāmānujajīyar*) नालडियार् (*Nāladiyār*) translated by श्री एस्. एन्. रामदेशिकः (*Śrī S. N Rāmadeśi ka*) - *Slokās*: 1 to 5
V	Translation from prose section Unit - I stories Grammar: Conjugation - *Loṭ lakārāḥ* (Imperative mood) (i) गच्छतु (*Gacchatu*) (ii) तिष्ठतु (*Tiṣṭhatu*) (iii) पठतु (*Paṭhatu*) (iv) शृणोतु (*Śṛṇotu*) (v) करोतु (*Karotu*)

Course Objectives	Demonstrate the usage of connecting words	K2
	Understand the alankaras which are used in devotional lyrics	K2
	Draft and summarize the literary texts	K3
	Identify the meaning, types of figure of speech of the prescribed text	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - IV* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	S	S
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	S	M	S	S	S
CO5	S	S	S	S	M

S-Strong   M-Medium   L-Low

9

UNIVERSITY OF MADRAS

U.G. AND FIVE YEAR INTEGRATED PG DEGREE PROGRAMS

FOUNDATION COURSE: PART I – ARABIC

(EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024)

Programme:	**U.G. AND FIVE YEAR INTEGRATED P.G. DEGREE PROGRAMS** **FOUNDATION COURSE: PART I – ARABIC**
Programme Code:	BFC-LA23
Duration:	**4 Semesters**

On successful completion of this program, the graduates are expected to achieve the following:

Programme Outcomes:	1. Acquire the knowledge of the structure of Arabic words 2. Acquaint with the knowledge of basic Arabic grammar 3. Become familiar with the knowledge of phonetic system of Arabic language 4. Able to communicate in Arabic 5. Have the knowledge of moral values in the light of Quran and Hadith
Programme Specific Outcomes:	1. Understand the sounds and phrasing of Arabic language. 2. Learn the basic Arabic grammar 3. Develop communication skills in Arabic 4. Acquire new vocabulary in Arabic 5. Learn the moral values of the Holy Quran and Sunnah

List of Courses:

Semester	Course Code	Title of the Course	Foundation Course	Credits
I	100L1H	Paper I : Prose	FC	3
II	100L2H	Paper II : Grammar	FC	3
III	200L3H	Paper III : Communication Skill in Arabic	FC	3
IV	200L4H	Paper IV : Quran and Hadith	FC	3

1

Course I	Course Code	Title of the Course	Credits
FC	100L1H	Paper I : Prose	3

Course Outcomes	1. Understand the correct pronunciation of Arabic letters 2. Understand the structure-based composition. 3. Acquire new vocabulary in Arabic 4. Read the Arabic sentences without diacritical marks 5. Able to write the simple sentences in Arabic without errors.
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the structure of Arabic language. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.

	Units
I	(دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثالث عشر
IV	من الدرس الرابع عشر إلى الدرس الثامن عشر
V	من الدرس التاسع عشر إلى الدرس الثالث والعشرين

2

Prescribed Text Book	دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم
	Duroos Al-Lugha Al-Arabiyya – Part I, By Dr. V. Abdur Rahim
Reading List (Print and online)	معجم الكلمات الواردة في دروس اللغة العربية لغير الناطقين بها
	مفتاح دروس اللغة العربية لغير الناطقين بها
	القراءة الراشدة — الشيخ أبو الحسن علي الحسني الندوي
	القراءة المفيدة — الدكتور محمد يوسف كوكن العمري
	منهاج العربية — السيد النبي حيدرآبادي
	www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

3

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course II	Course Code	Title of the Course	Credits
FC	100L2H	Paper II : Grammar	3

Course Outcomes	1. Able to use basic grammatical structure. 2. Develop reading skills and reading speed 3. Acquire new vocabulary in Arabic 4. Understand the different types of sentences. 5. Able to construct simple sentences in Arabic
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the correct usage of Arabic grammar. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.
Units	
I	(قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثاني عشر

4

IV	من الدرس الثالث عشر إلى السادس عشر
V	من الدرس السابع عشر إلى الدرس العشرين
Prescribed Text Book	قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله Basic Arabic Grammar, By Dr. Syed Rahmathullah
Reading List (Print and online)	النحو الواضح — علي الجارم ومصطفى أمين دليل النحو الواضح — الدكتور بشير أحمد جمالي سهل العوامل __ الدكتور تاج الدين المناني النحو الميسر للكبار والصغار — علي محمود عقيلي القواعد التطبيقية في اللغة العربية — الدكتور نديم دعكور www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

5

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	3	1

3-Strong   2-Medium   1-Low

Course III	Course Code	Title of the Course	Credits
FC	200L3H	Paper III : Communication Skill in Arabic	3
Course Outcomes	1. Understand the basics of Arabic language. 2. Learn the structure of Arabic words. 3. Familiarize with the phonetic system of Arabic. 4. Able to communicate in Arabic 5. Able to translate from Arabic to English and vice versa		
Pre-requisites, if any:	Nil		
Course Objectives	1. Understand the sounds and phrasing of Arabic language. 2. Acquire new vocabulary and apply in context. 3. Develop communication skills in Arabic. 4. Understand the different aspects of communication. 5. Learn to communicate in everyday interactions.		
Units			
I	(الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول — السعيد محمد بدوي وفتحي علي يونس) التعارف – في المطار (١)		
II	في الفندق – في المطعم		
III	في البنك – عند الطبيب (١)		

6

IV	في الطريق – في مكتب البريد
V	في السوق (١) – في السوق (٢)
Prescribed Text Book	الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول – السعيد محمد بدوي وفتحي علي يونس Al Kitaab Al Asaasi Fi Taleem Al Lugha Al Arabiyya Li Ghair An Naatiqeena Biha - Part I, By Sayeed Muhaamad Badawi and Fathi Ali Yunus
Reading List (Print and online)	A Practice Book on Gulf Arabic, By Dr. Abdul Jaleel. T Arabic Conversation Book, By Mohd. Harun Rashid and Khalid Perwez A Hand book of Commercial Arabic by Dr. Aboobacker K.P العربية لغير العرب – د. مصطفى حسن الريس، الأزهر العربية للحياة – جامعة الملك سعود القراءة العربية لغير العرب – وزارة التربية بالكويت www.talkinarabic.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

7

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course IV	Course Code	Title of the Course	Credits
FC	200L4H	Paper IV : Quran and Hadith	3
Course Outcome	1. Know the principal textual sources of the Islamic tradition: The Qur'an and the Hadith. 2. Know the role of Quran and Hadith in the synthesis of Islamic faith and practice. 3. Understand the structure of Arabic grammar through Quran and Hadith. 4. Understand the methodology of translation of Quran and Hadith. 5. Understand the moral values of Quran and Hadith	
Pre-requisites, if any:	Nil	
Course Objectives	1. Know the importance of Quran and Hadith. 2. Understand the style of Quran and Hadith. 3. Understand the role of Quran and Hadith in the Islamic faith and law.	

8

	4. Know the structure of Arabic grammar through the examples from Quran and Hadith.
	5. Learn the cultural and moral values.
Units	
I	(١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم) سورة لقمان من الآية ١ إلى الآية ١٠
II	من الآية ١١ إلى ٢٠
III	من الآية ٢١ إلى ٣٤
IV	أحاديث سهلة من الحديث ١ إلى الحديث ١٠
V	من الحديث ١١ إلى الحديث ٢٠
Prescribed Text Book	١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم 1) Sooratu Luqman 2) Ahadeeth Sahlah By Dr. V. Abdur Rahim
Reading List (Print and online)	Tafsir Al-Jalalain The Noble Quran, Dr. Muhammad Muhsin Khan and Muhammad Taqi-Ud-Dhin Al-Hilali الأربعون النووية نصوص من الحديث النبوي الشريف، الدكتور ف. عبد الرحيم

9

	شرح أحاديث سهلة، الدكتور ش. عبد المالك
	https://quran.com/
	https://sunnah.com/nawawi40

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	1	2	3	3	3

3-Strong   2-Medium   1-Low

10

UNIVERSITY OF MADRAS

FOUNDATION COURSE: FRENCH

SYLLABUS WITH EFFECT FROM 2023-2024

UG & 5 Year PG Integrated - SEMESTER – I

Foundation Course in French: Prescribed Text and Grammar-I

Course Outcomes	1. Introduce oneself and talk about one's likes and dislikes 2. Invite someone, to accept or deny an invitation 3. Making purchases at the market 4. Recall and remember the usage of grammatical tenses in constructing sentences in a dialogue. 5. Apply the learnt grammar rules in practice exercises to improve their understanding		
Course	Foundation Course in French	**Course Code**	100L1K
Title of the Course:	Prescribed Text and Grammar-I		
Credits:	3		
Pre-requisites, if any:	---		
Course Objectives	Identify the basic French sentence structure		K1
	Define and describe the various grammatical tenses and use them to communicate in French		K2
	Examine the various documents presented and discuss and reply to the questions asked on it		K2 and K3
	Analyze and interpret expressions used to convey the cause, the effect, the purpose, and the opposition in French		K4
	Evaluate the grammatical nature present in passages		K5
Units			
I	Unité 1: Salut ! Unité 2: Enchanté!		
II	Unité 3: J'adore !		
III	Unité 4: Tu veux bien ?		
IV	Unité 5: On se voit quand ?		
V	Unité 6: Bonne idée !		
Prescribed Text	Régine Mérieux & Yves Loiseau, **Units 1-6** of *Latitudes* **1** (A1 /A2), méthode de français, Didier, 2017 (Indian Edition)		

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	L	S	M	L	S	S	S	M	S	M
CO2	S	M	M	L	M	M	L	S	S	S	S	S	M
CO3	M	S	S	M	M	M	L	S	M	M	M	S	M
CO4	S	M	M	L	S	M	L	S	S	S	M	S	M
CO5	S	M	M	L	M	M	L	S	S	S	S	S	M

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS
FOUNDATION COURSE: FRENCH
SYLLABUS WITH EFFECT FROM 2023-2024

SEMESTER I

Title of the Paper : Prescribed Text and Grammar-I

Prescribed textbook : Régine Mérieux & Yves Loiseau, **Units 1-6** *of Latitudes 1 (*Indian Edition), Paris, Didier, 2017**.**

Questions not to be asked from the Autoévaluation and Préparation au DELF

Paper setters are to strictly adhere to the syllabus and ask questions only from the pages included in the syllabus. Questions should cover the entire syllabus.

QUESTION PAPER PATTERN

Time : 3 Hours   Maximum Marks : 75

Section A (10 x 2 = 20 Marks)

Answer any TEN questions
15 questions to be asked on cultural / civilisational aspects found in the prescribed textbook

Section B (5 x 5 = 25 Marks)
Answer any FIVE questions
8 Grammar exercises to be given from the prescribed textbook

Section C (3 x 10 = 30 Marks)
Answer any THREE
3 must be answered out of 5 topics (1 dialogue writing, 1 letter /email writing, 1 composition, 1 comprehension, 1 translation)

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UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

FIRST YEAR - SEMESTER I
PAPER II –GENERAL ENGLISH

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
100L1ZU	**Part II**	Y	Y	-	-	3	6	25	75	100

	Learning Objectives
LO1	To enable learners to acquireself awareness and positive thinking required in various life situations.
LO2	To help them acquire the attribute of empathy
LO3	To assist them in acquiring creative and critical thinking abilities
LO4	To enable them to learn the basic grammar
LO5	To assist them in developing LSRW skills

Unit No.	Unit Title & Text	No. of Periods for the Unit
I	**SELF-AWARENESS(WHO)&POSITIVE THINKING(UNICEF)** **Life Story** 1.1 Chapter 1 from MalalaYousafzai, I am Malala 1.2 An Autobiography or The Story of My Experiments with Truth (Chapters 1, 2 & 3) M.K.Gandhi **Poem** 1.3 Where the Mind is Without Fear – Gitanjali 35 – Rabindranath Tagore 1.4 Love Cycle – Chinua Achebe	20
II	**EMPATHY** **Poem** 2.1 Nine Gold Medals – David Roth 2.2 Alice Fell or poverty – William Wordsworth **Short Story** 2.3 The School for Sympathy – E.V. Lucas 2.4 Barn Burning – William Faulkner	20
III	**CRITICAL & CREATIVE THINKING** **Poem** 3.1 The Things That Haven't Been Done Before – Edgar Guest 3.2 Stopping by the Woods on a Snowy Evening – Robert Frost	20

1

	Readers Theatre 3.3 The Magic Brocade – A Tale of China 3.4 Stories on Stage – Aaron Shepard (Three Sideway Stories from Wayside School" by Louis Sachar)	
IV	**Part of Speech** 4.1 Articles 4.2 Noun 4.3 Pronoun 4.4 Verb 4.5 Adverb 4.6 Adjective 4.7 Preposition	15
V	**Paragraph and Essay Writing** 5.1 Descriptive 5.2 Expository 5.3 Persuasive 5.4 Narrative **Reading Comprehension**	15

Course Outcomes		
Course Outcomes	On completion of this course,students will:	
CO1	Acquire self awareness and positive thinking required in various life situations	PO1,PO7
CO2	Acquire the attribute of empathy.	PO1,PO2,PO10
CO3	Acquire creative and critical thinking abilities.	PO4,PO6,PO9
CO4	Learn basic grammar	PO4,PO5,PO6
CO5	Development and integrate the use of four language skills i.e., listening, speaking, readingand writing.	PO3,PO8

	Text books (Latest Editions)
1.	MalalaYousafzai. I am Malala, Little, Brown and Company, 2013.
2.	M.K. Gandhi. An Autobiography or The Story of My Experiments with Truth (Chapter – I), Rupa Publications, 2011.
3.	Rabindranath Tagore. "Gitanjali 35" from Gitanjali (Song Offerings): A Collection of Prose Translations Made by the Author from the Original Bengali. MacMillan, 1913.
4.	N.Krishnasamy. Modern English: A Book of Grammar, Usage and Composition Macmillan, 1975.
5.	Aaron Shepard. Stories on Stage, ShepardPublications, 2017.
6.	J.C. Nesfield. English Grammar Composition and Usage, Macmillan, 2019.

2

UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

Web Resources	
1	MalalaYousafzai. I am Malala (Chapter 1) https://archive.org/details/i-am-malala
2	M.K Gandhi. An Autobiography or The Story of My Experiments with Truth(Chapter-1)- Rupa Publication, 2011 https://www.indiastudychannel.com/resources/146521-Book-Review-An-Autobiography-or-The-story-of-my-experiments-with-Truth.aspx
3	Rabindranath Tagore. "Gitanjali 35" from Gitanjali (Song Offerings)https://www.poetryfoundation.org/poems/45668/gitanjali-35
4	Aaron Shepard.Stories on Stage, Shepard Publications, 2017 https://amzn.eu/d/9rVzlNv
5	J C Nesfield. Manual of English Grammar and Composition. https://archive.org/details/in.ernet.dli.2015.44179

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	3	3	3	3	2	3	2
CO2	2	3	3	3	2	3	3	2	2	2
CO3	3	3	3	2	3	3	3	2	3	2
CO4	3	3	3	3	3	3	3	2	2	2
CO5	3	2	3	3	3	3	3	2	2	3

Mapping with Programme Specific Outcomes:

CO /PO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3
Weightage	15	15	15	15
Weighted percentage of Course Contribution to POS	3.0	3.0	3.0	3.0

3 – Strong, 2 – Medium, 1 - Low

3

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester:I
Foundation Course: Fundamentals of Computers (Common to B.Sc.-CS with AI, CS with DS, Software Appl. & BCA)		125B1A
Credits 2		**Lecture Hours:2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

- to understand fundamentally the general scope of the computer system
- to interact effectively with the computer
- to know the uses of the basic components of the computer
- to manage the system to some extent before involving an expert
- to know some basic things about the computer and the world

Course Outcomes: (for students: To know what they are going to learn)

CO1: Fundamental concepts of computer

CO2: Fundamental mathematical techniques and how they relate to computer

CO3: The architecture of processing and file storage in a computer system

CO4: Basic operations of operating systems

CO5: A variety of software packages applicable to an academic, software development and business environment

Units	Contents
I	**Understanding the Computer: -** Introduction - Evolution of Computers - Generations of Computers - Classification of Computers - Computing Concepts - The Computer System - Applications of Computers. **Computer Organisation and Architecture: -** Introduction - Central Processing Unit - Internal Communications - Machine Cycle - The Bus - Instruction Set. **Memory and Storage Systems: -** Introduction - Memory Representation - Random Access Memory - Read Only Memory - Storage Systems - Magnetic Storage Systems - Optical Storage Systems - Magneto Optical Systems - Solid-state Storage Devices - Storage Evaluation Criteria. **Input Devices: -** Introduction - Keyboard - Pointing Devices - Scanning Devices - Optical Recognition Devices - Digital Camera - Voice Recognition System - Data Acquisition Sensors - Media Input Devices.**Output Devices: -** Introduction - Display Monitors - Printers - Impact Printers - Non-impact Printers - Plotters - Voice Output - Systems - Projectors - Terminals
II	**Computer Codes: -** Introduction - Decimal System - Binary System - Hexadecimal System - Octal System - Binary Coded Decimal (BCD) Systems – Unicode. **Computer Arithmetic: -** Introduction - Binary Addition - Binary Multiplication - Binary Subtraction - Binary Division - Signed/unsigned Numbers - Complements of Binary Numbers - Binary Subtraction Using Complements - Representing Numbers - Integer Arithmetic - Floating-point Arithmetic

III	**Boolean Algebra of Switching Circuits: -** Introduction - Elements of Boolean Algebra - Basic Postulates of Boolean Algebra - Boolean Operations - Principle of Duality - Basic Laws of Boolean Algebra - De Morgan's Theorem - Boolean Expressions. **Logic Gates and Digital Circuits: -** Introduction - Basic Logic Gates - Derived Logic Gates - Conversion of Boolean Functions - Adder Circuits - Flip-flop Circuits - Application of Flip-flops. **Computer Software: -** Introduction - Types of Computer Software - System Management Programs - System Development Programs - Standard Application Programs - Unique Application Programs - Problem Solving - Structuring the Logic - Using the Computer
IV	**Operating Systems: -** Introduction - History of Operating Systems - Functions of Operating Systems - Process Management - Memory Management - File Management - Device Management - Security Management - Types of Operating Systems - Providing User Interface - Popular Operating Systems. **Programming Languages: -** Introduction - History of Programming Languages - Generations of Programming Languages - Characteristics of a Good Programming Language - Categorisation of High-level Languages - Popular High-level Languages - Factors Affecting the Choice of a Language - Developing a Program - Running a Program
V	**Data Communications and Networks: -** Introduction - Data Communication Using Modem - Computer Network - Network Topologies - Network - Protocols and Software - Applications of Network. **The Internet and World Wide Web: -** Introduction - History of Internet - Internet Applications - Understanding the World Wide Web - Web Browsers - Browsing the internet - Using a Search Engine - Email Service - Protocols Used for the Internet

Learning Resources:
Recommended Texts
1. E Balagurusamy. Fundamentals Of Computers, Tata McGraw Hill Publishing Company Limited
2. Fundamentals of Computers (Paperback), 2019,Manaullah Abid, Mohammad Amjad, Dreamtech Press

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I   **Semester:I**

Core-I: Python Programming (Common to B.Sc.-CS with AI, CS with DS, Software Appl.& BCA)	**125C1A**

Credits 5   **Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- Describe the core syntax and semantics of Python programming language.
- Discover the need for working with the strings and functions.
- Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
- Understand the usage of packages and Dictionaries

Course Outcomes: (for students: To know what they are going to learn)

CO1: Develop and execute simple Python programs

CO2: Write simple Python programs using conditionals and looping for solving problems

CO3: Decompose a Python program into functions

CO4: Represent compound data using Python lists, tuples, dictionaries etc.

CO5: Read and write data from/to files in Python programs

UNITS	CONTENTS
I	Introduction: The essence of computational problem solving – Limits of computational problem solving-Computer algorithms-Computer Hardware-Computer Software-The process of computational problem solving-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types, Input / output.
II	Control Structures: Boolean Expressions - Selection Control - If Statement-Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement- Infinite loops- Definite vs. Indefinite Loops- Boolean Flag. String, List and Dictionary, Manipulations Building blocks of python programs,Understanding and using ranges.
III	Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning Functions- Calling Non-Value-Returning Functions- Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope. Recursion: Recursive Functions.
IV	Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - Top-Down Design - Python Modules - Text Files: Opening, reading and writing text files – Exception Handling.
V	Dictionaries and Sets: Dictionary type in Python - Set Data type. Object Oriented Programming using Python: Encapsulation - Inheritance – Polymorphism. Python packages: Simple programs using the built-in functions of packages matplotlib, NumPy, pandas etc.

Learning Resources:

Recommended Texts

1. Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem-solving Focus", Wiley India Edition, 2015.

2. Wesley J. Chun, "Core Python Applications Programming", 3rd Edition , Pearson Education, 2016

Reference Books

1. Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th   Edition.

2. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st   Edition.

3. John Zelle, "Python Programming: An Introduction to Computer Science", Second edition, Course   Technology Cengage Learning Publications, 2013, ISBN 978-1590282410

4. Michel Dawson, "Python Programming for Absolute Beginers" , Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-143545500

Web resources

1. https://onlinecourses.swayam2.ac.in/cec22_cs20/preview

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester:I
Core-II: Python Programming Practical (Common to B.Sc.-CS with AI, CS with DS, Software Appl.& BCA)		**125C11**
Credits 5		**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- Acquire programming skills in core Python.
- Acquire Object-oriented programming skills in Python.
- Develop the skill of designing graphical-user interfaces (GUI) in Python.
- Develop the ability to write database applications in Python.
- Acquire Python programming skills to move into specific branches

Course Outcomes: (for students: To know what they are going to learn)

CO1: To understand the problem solving approaches

CO2: To learn the basic programming constructs in Python

CO3: To practice various computing strategies for Python-based solutions to real world problems

CO4: To use Python data structures - lists, tuples, dictionaries.

CO5: To do input/output with files in Python.

List of Programs

1. Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a Python program to construct the following pattern, using a nested loop

```
        *
       **
      ***
     ****
    *****
     ****
      ***
       **
        *
```

3. Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:
   Grade A: Percentage >=80   Grade B: Percentage >=70 and 80
   Grade C: Percentage >=60 and <70   Grade D: Percentage >=40 and <60
   Grade E: Percentage < 40
4. Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
5. Write a Python script that prints prime numbers less than 20.
6. Program to find factorial of the given number using recursive function.

7. Write a Python program to count the number of even and odd numbers from array of N numbers.
8. Write a Python class to reverse a string word by word.
9. Given a tuple and a list as input, write a program to count the occurrences of all items of the list in the tuple. (Input: tuple = ('a', 'a', 'c', 'b', 'd'), list = ['a', 'b'], Output: 3)
10. Create a Savings Account class that behaves just like a Bank Account, but also has an interest rate and a method that increases the balance by the appropriate amount of interest (Hint: use Inheritance).
11. Read a file content and copy only the contents at odd lines into a new file.
12. Create a Turtle graphics window with specific size.
13. Write a Python program for Towers of Hanoi using recursion
14. Create a menu driven Python program with a dictionary for words and their meanings.
15. Devise a Python program to implement the Hangman Game.

Learning Resources:

Recommended Texts

1. Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem-solving Focus", Wiley India Edition, 2015.

2. Wesley J. Chun, "Core Python Applications Programming", 3rd Edition , Pearson Education, 2016

Reference Books

1. Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th   Edition.

2. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st   Edition.

3. John Zelle, "Python Programming: An Introduction to Computer Science", Second edition, Course   Technology Cengage Learning Publications, 2013, ISBN 978- 1590282410

4. Michel Dawson, "Python Programming for Absolute Beginers", Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009

UNIVERSITYOFMADRAS
B.Sc.DEGREEPROGRAMMEINCOMPUTERSCIENCE
SYLLABUSWITHEFFECTFROM2023-2024

Year:I   **Semester: I**

TitleoftheCourse	MATHEMATICS–I (Common to B.Sc Physics, Physics with CA, Chemistry, ECS, DataScience, Artificial Intelligence, Software Applications & BCA)					
PaperNumber	ELECTIVECOURSEI					
Category	Elective	Year	I	Credits	3	Course Code	125E1A
		Semester	I				
Instructional Hoursperweek	Lecture		Tutorial	LabPractice		Total
	4		1	--		5
Pre-requisite	12thStandardMathematics					
Objectives ofthe Course	• Students gain knowledge about the basic concepts of Algebra, Theory of Equations. • They also gain the basic knowledge in Matrices, Trigonometry and Differential Calculus.					
CourseOutline	**UNIT-I: Summation of series**: Binomial series -Exponential series - Logarithmic series -Simple Problems. **Hours:15** **Chapter2: Sections:2.1.3,2.2,2.2.1,2.3,2.3.3.**					
	UNIT II: **Matrices:** Symmetric– Skew-Symmetric–Hermitian– Skew-Hermitian–OrthogonalandUnitarymatrices–Cayley-Hamiltontheorem (without proof) – Verification- Computation of inverse of matrix using Cayley - Hamilton theorem. **Chapter4:Sections:4.1.1–4.1.6,4.5.2and4.5.3.** **Hours:15**					
	UnitIII:**NumericalMethods:**Newton'smethodtofindaroot approximately. **FiniteDifferences**:Interpolation:Operators,Δ,∇,E,E^{-1}differencetables. Interpolation formulae: Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula. **Hours:15** **Chapter3:Sections3.4.1.Chapter5:Sections:5.1 and5.2.**					
	Unit IV: Trigonometry: Expansions of $\sin^n\theta$, $\cos^n\theta$ in a series of powers of $\sin\theta$and $\cos\theta$ -Expansions of $\sin(n\theta)$ and $\cos(n\theta)$ in aseriessinesandcosines ofmultiplesof"θ"-Expansionsof$\sin\theta$,$\cos\theta$and$\tan\theta$in aseriesofpowers of "θ"– Hyperbolicandinversehyperbolic functions . **Chapter6:Section6.1– 6.3** **Hours:15**					
	Unit V: Differential Calculus: Successive differentiation, n th derivatives, Leibnitz theorem (without proof) and applications, Jacobians, maxima and minima of functions of twovariables- Simple problems **Chapter1,Section1.1to1.3.1.** **Hours:15**					
						TotalHours:75

Extended Professional Component (is a part of internal component only, Nottobeincluded in the External Examination question paper)	Questionsrelatedtotheabovetopics,fromvariouscompetitiveexaminations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency,ProfessionalCommunicationandTransferrable Skill
Recommended Text	AlliedMathematics,VolumeIandVolumeIIbyP.Duraipandianand S.Udayabaskaran, S. Chand Publications **VolumeI:UnitI–IV,VolumeII–UnitV**
ReferenceBooks	1.AncillaryMathematicsbyS.NarayananandT.K.ManickavachagomPillay, S.ViswanathanPinters,1986,Chennai Allied MathematicsbyA.Singaravelu AlliedMathematicsbyP.R.Vittal
Websiteand e-LearningSource	1. http://www.themathpaage.com 2. http://nptel.ac.in

CourseLearningOutcome(forMappingwith POsandPSOs)

Studentswillbeableto

CLO1:UnderstandtheconceptsofSummationofSeries.

CLO2:UnderstandtheconceptsofCayleyHamiltonTheoremandinversematrices.

CLO3:Understandtheconceptsoffinitedifferences.

CLO4:Understandtheknowledgeaboutexpansions,hyperbolicandinversehyperbolic functions.

CLO5:UnderstandtheconceptofLeibnitztheoremandfunctionsoftwovariables

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
CLO 1	2	3	1	3	1	1	3	1	1
CLO 2	3	2	1	3	1	1	3	1	1
CLO 3	3	2	1	3	1	1	3	1	1
CLO 4	3	3	1	3	1	1	3	1	1
CLO 5	3	2	1	3	1	1	3	1	1

-x-x-x-x-

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester: I

Elective: Statistics-I (Common to B.Sc.-CS with AI, CS with DS, Software Appl. & BCA)	125E1B

Lecture Hours: 5 per week	Credits: 3

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

Course Outcomes: (for students: To know what they are going to learn)
1. Know the uses of statistics in society
2. Organize, manage and present data
3. Analyze the statistical data graphically using frequency distribution and cumulative frequency distribution.
4. Analyze statistical data using measures of central tendency, dispersion and location.
5. To understand correlation between continuous variables and association between categorical variables.

Units	Contents
I	Methods of collection: Complete enumeration – Sample Survey - Primary data - Secondary data sources - Types of variables. Norminal, ordinal and scale data. Presentation of Data: Presentation of data by tables - construction of tables (Univariate and Bivariate) – frequency table and contingency table
II	Diagrammatic presentation: Line diagram, Bar diagrams: Simple, multiple, subdivided and Percentage-Pie chart, comparative pie chart - Graphical representation of a frequency distribution by histogram and frequency polygon and Ogives
III	Analysis of Data (Univariate): Measures of central tendency: Arithmetic mean-Median and Mode choice of an average-characteristic of a good average
IV	Measures of dispersion: Range-Quartile deviation-mean deviation - standard deviation - relative measures of dispersion - Coefficient of Variance
V	Analysis of Data (Bivariate): Correlation- Scatter plot-coefficient of correlation-Pearson's Correlation Coefficient, Spearmen's rank correlation coefficient-correlation coefficient for bivariate frequency table- Association of attributes: Chi-square test of independence of attributes

Suggested Readings:
Books for study:
1. Gupta, S.C and Kapoor, V. K (2002), *Fundamentals of Mathematical Statistics*, Sultan Chand and Sons, New Delhi.
2. Goon A.M., Gupta M.K. and Dasgupta B. (2002): *Fundamentals of Statistics*, Vol. I & II, 8th Edn. The World Press, Kolkata.
3. Irwin Miller, Marylees Miller (2006): *John E. Freund's Mathematical Statistics with Applications*, (7th Edn.), Prentice Hall International INC.
4. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007): *Introduction to the Theory of Statistics*, 3rd Edn., (Reprint), Tata McGraw-Hill Pub. Co. Ltd

Books for reference:
1. Saxena H.C.: *Elementary Statistics*. S. Chand & Co., 2009.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester: I
Elective: Physics-I (Theory) (Common to B.Sc. CS with AI)		**125E1C**
Lecture Hours: 3 per week		**Credits: 2**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

This paper introduces the students to the basic concepts of Elasticity, Rotational motion, Heat and thermodynamics, Sound, Optics, Atomic and Nuclear Physics

Course Outcomes: (for students: To know what they are going to learn)

1. Explore the fundamental concepts of physics
2. Import knowledge about the importance of material properties, heat, sound, optics, atomic and nuclear physics.
3. Understand the energy involved in nuclear reaction
4. Carry out the practical by applying these concepts
5. Get depth knowledge of physics in day today life

Units	Contents
I	Properties of Matter Young's modulus – Rigidity modulus – Bulk modulus – Poisson's ratio (definition alone) – Bending of beams – Expression for Bending Moment – Determination of Young's Modulus – Uniform and Non-Uniform bending. Expression for Couple per unit twist – Work done in twisting a wire – Torsional oscillations of a body– Rigidity modulus of a wire and M.I. of a disc by Torsion Pendulum.
II	Viscosity Viscosity – Viscous force – Co-efficient of Viscosity – Units and Dimensions – Poiseuille's formula for co-efficient of viscosity of a liquid – determination of co-efficient of viscosity using burette and comparison of Viscosities - Bernoulli's theorem – Statement and proof – Venturi meter – Pitot tube.
III	Conduction, Convection and Radiation Specific heat Capacity of Solids and Liquids – Dulong and Petit's law – Newton's law of Cooling – Specific Heat Capacity of a Liquid by Cooling – Thermal Conduction –Coefficient of Thermal Conductivity by Lee's disc Method. Convention Process – Lapse Rate – Green House Effect – Black Body Radiation – Planck's Radiation Law – Rayleigh Jean's Law, Wien's Displacement Law – Stefan's Law of Radiation. (No Derivations).
IV	Thermodynamics Zeroth and I Law of Thermodynamics – II law of Thermodynamics – Carnot's engine and Carnot's cycle – Efficiency of a Carnot's Engine – Entropy – Change in Entropy in Reversible and Irreversible Process – Change in entropy of a perfect gas – Change in Entropy when Ice is converted into steam.

V	Optics
	Interference – Conditions for Interference Maxima and Minima – Air Wedge – Thickness of A
	Thin Wire – Newton's Rings – Determination of Wavelength Using Newton's Rings.
	Diffraction – Difference Between Diffraction and Interference – Theory of Transmission Grating – Normal Incidence – Optical Activity – Biot's Laws – Specific Rotatory Power – Determination of Specific Rotatory Power Using Laurent's Half Shade Polarimeter.

TEXT BOOKS:
BOOKS FOR STUDY:

1. Properties of matter, Brijlal and Subramanyam, Eurasia Publishing co., New Delhi, III Edition 1983

2. Element of properties of matter, D.S.Mathur, S.Chand& Company Ltd, New Delhi, 10th Edition 1976

3. Heat and Thermodynamics, Brijlal&Subramanyam, S.Chand& Co, 16th Edition 2005

4. Heat and Thermodynamics, D.S. Mathur, Sultan Chand& Sons, 5th Edition 2014.

5. Optics and Spectroscopy, R.Murugeshan, S.Chand and co., New Delhi, 6th Edition 2008.

6. A text book of Optics, Subramanyam and Brijlal, S. Chand and co., New Delhi, 22nd Edition 2004.

7. Optics, Sathya Prakash, Ratan PrakashanMandhir, New Delhi, VII Edition 1990.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: I   **Semester:I**

Skill Enhancement Course: Office Automation (Common to B.Sc.-CS with AI, CS with DS, Software Appl.& BCA)	**125S1A**

Credits 2	**Lecture Hours:2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- The major objective in introducing the Computer Skills course is to impart training for students in Microsoft Office which has different components like MS Word, MS Excel and Power point.
- The course is highly practice oriented rather than regular class room teaching.
- To acquire knowledge on editor, spread sheet and presentation software.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Understand the basics of computer systems and its components.
CO2: Understand and apply the basic concepts of a word processing package.
CO3: Understand and apply the basic concepts of electronic spreadsheet software.
CO4: Understand and apply the basic concepts of database management system.
CO5: Understand and create a presentation using PowerPoint tool.

UNITS	CONTENTS
I	Introductory concepts: Hardware and Software - Memory unit – CPU-Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems - Introduction to Programming Languages.
II	Word Processing: File menu operations - Editing text – tools, formatting, bullets and numbering - Spell Checker - Document formatting – Paragraph alignment, indentation, headers and footers, printing – Preview, options, merge.
III	Spreadsheets: Excel – opening, entering text and data, formatting, navigating; Formulas – entering, handling and copying
IV	Charts – creating, formatting and printing, analysis tables, preparation of financial statements, introduction to data analytics.
V	Power point: Introduction to Power point - Features – Understanding slide typecasting & viewing slides – creating slide shows. Applying special object – including objects & pictures – Slide transition – Animation effects, audio inclusion, timers.

Learning Resources:
Recommended Texts
1. Peter Norton, "Introduction to Computers" –Tata McGraw-Hill.

Reference Books
1. Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, "Microsoft 2003", Tata McGraw- Hill.

Web resources : Web content from NDL / SWAYAM or open source web resources

செ‌ன்‌னை‌ப் ‌பல்‌கலை‌க்‌கழ‌கம்
University of Madras

Part-IV

வளர்நிலைத் தமிழ் - பாடத்திட்டம்

Advanced Tamil - Syllabus

2 பருவங்கள் (முதல் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

வளர்நிலைத் தமிழ் - I (Advanced Tamil - I)

Course Code	Course Name	Category	L	T	P	S	Credit	Ins. Hours	Marks		
									CIA	External	Total
100S1B	வளர்நிலைத் தமிழ் - I Advanced Tamil - I	Supportive	2	-	-	-	2	2	25	75	100
Pre - requisite	பத்தாம் வகுப்பு வரை தமிழை மொழிப்பாடமாகப் படித்திருக்க வேண்டும்.									SV 2023	

Learning Objectives - கற்றல் நோக்கங்கள்

- இக்கால இலக்கியங்களில் இன்றியமையாத சில வகைமைகளை மாணவர்கள் அறியுமாறு செய்தல்.

- அழியும் நிலையில் உள்ள நாட்டுப்புறப் பாடல்கள் குறித்த விழிப்புணர்வை ஏற்படுத்துதல்.

- உரைநடை வடிவத்தின் குறிப்பிடத்தக்க கூறான கட்டுரை இலக்கியம் பற்றியும் அதன் சிறப்புகள் குறித்தும் அறியச் செய்தல்.

- தம் உள்ள கருத்துகளை நடப்பு இலக்கிய வடிவங்களைப் பயன்படுத்திச் சமூகத்துக்குப் படைத்தளிக்கத் தூண்டுதல்.

- மொழிப் பிழைகள் நேராமல் தவிர்த்து, பல்வகை ஊடகங்களிலும் வேலை வாய்ப்பு பெற ஊக்கமளித்தல்.

Expected Course Outcomes - எதிர்பார்க்கப்படும் கற்றல் அடைவுகள்

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

இப் பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	சமகால இலக்கியங்களின் நோக்குகள்- போக்குகள் குறித்து மாண வர்கள் அறிந்துகொள்வர்.	K2
CO 2	நாட்டுப்புற மக்களின் வாழ்வியல் , அறிவாற்றல், இன்றைய நிலை ஆகியவை குறித்துச் சிந்திப்பர்.	K1,K2
CO 3	தங்கள் கற்பனை வளத்தை மாணவர்கள் பெருக்கிக் கொள்வர்.	K2,K4,K6
CO 4	மொழியில் பிழைகள் நேரா வண்ணம் எழுதக் கற்றுக் கொள்வதோடு , திறனாய்வு செய்யும் ஆற்றல் பெறுவர்.	K5,K4
CO 5	திரைப்படம், சின்னத்திரை, தொலைக்காட்சி உள்ளிட்ட ஊடகங்களில் பாடல், இசை, எழுத்து எனப் பல்வேறு வேலைவாய்ப்புகள் பெறுவர்.	K5,K4,K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

Unit - I	நாட்டுப்புறப் பாடலும் கவிதையும்
	1. கி.வ.ஜா.வின் மலையருவி அல்லது ஏதேனும் ஒரு நாட்டுப்புறத் தொகுப்பிலிருந்து தேர்ந்தெடுத்துத் தாலாட்டுப் பாடல், சிறுவர் விளையாட்டுப் பாடல், தொழில் பாடல், ஒப்பாரிப் பாடல் ஆகியவற்றை மாணவர்களுக்கு அறிமுகப்படுத்துதல். 2. தமிழ்த்தாய் வாழ்த்து முதல் பாடல் மட்டும். 3. பாரதியாரின் "செந்தமிழ் நாடென்னும் போதினிலே" பாடல்.
Unit - II	புதுக்கவிதையும் சிறுகதையும்
	1. "நிலத்தை ஜெயித்த விதை" - வைரமுத்து 2. "தீக்குச்சி" (பித்தன் தொகுப்பு) - அப்துல் ரஹ்மான் 3. "கட்டை விரல்" - கா.ந. அண்ணாதுரை 4. "சனிக்கிழமை" (காகித உறவு தொகுப்பு) - சு.சமுத்திரம்

Unit - III	கட்டுரையும் குறிப்புகளைக்கொண்டு கட்டுரை எழுதுதலும்
	1. மு.வ.வின் "நல்வாழ்வு" தொகுப்பிலிருந்து ஏதேனும் ஒரு கட்டுரை.
	2. குறிப்புகளைக் கொடுத்துக் கட்டுரை எழுதச் செய்தல்.
Unit - IV	ம் நேர்காணலும்திறனாய்வு
	இலக்கியநயம் பாராட்டுதல், நூல் திறனாய்வு, திரைப்படத் திறனாய்வு. நேர்காணல்
Unit - V	மொழிப் பயிற்சி
	1. திணை, பால், எண், இடப் பயன்பாடு அறிதல்.
	2. பொருந்திய சொல் தருதல்.
	3. பிழை நீக்கி எழுதுதல்.

Text book (s)

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Reference Books / Websites

-

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
CLO 1	3	2	3	2	2	3	2	2	2	2	3	3
CLO 2	2	2	2	3	3	2	2	3	3	2	2	2
CLO 3	3	3	3	2	2	3	3	2	3	3	3	3
CLO 4	3	2	3	3	3	3	2	2	2	2	3	2
CLO 5	2	2	3	3	2	2	3	3	2	3	3	2

Strong - 3, Medium - 2, Low - 1

செ்னைப் பல்கலைக்கழகம்
University of Madras

Part-IV

அடிப்படைத் தமிழ் - பாடத்திட்டம்

Basic Tamil - Syllabus

2 பருவங்கள் (முதல் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

அடிப்படைத் தமிழ் - I (Basic Tamil - I)

Course Code	Course Name	Category	L	T	P	S	Credit	Ins. Hours	Marks		
									CIA	External	Total
100S1A	அடிப்படைத் தமிழ் - I Basic Tamil - I	Supportive	2	-	-	2	2	25	75	100	
Pre - requisite	தமிழ் கற்கும் ஆர்வம்.									SV 2023	

Learning Objectives - கற்றல் நோக்கங்கள்

- பிறமொழி மாணவர்களுக்குத் தமிழ்மொழி பயிற்றுவித்தல்.

- தமிழ் எழுத்துகளின் வரிவடிவங்களை அறிவதோடு உச்சரிக்கவும் எழுதவும் பயிற்றுவித்தல்.

- கற்றுக்கொண்ட சொற்களைக் கொண்டு தொடர்களை அமைத்துப் பேசக் கற்றுக்கொள்ளச் செய்தல்.

- தமிழ்பேசும் மக்களிடையே அவர்கள் கலந்துபழகி, தங்கள் வாழ்வைச் சிறப்பாக நடத்தத் தேவையான மொழிவளத்தைப் பெறச் செய்தல்.

Expected Course Outcomes - எதிர்பார்க்கப்படும் கற்றல் அடைவுகள்

On the successful completion of the course, students will be able to
இப் பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்.

CO 1	தமிழ் உயிரெழுத்து வடிவங்களை யும் மெய்யெழுத்து வடிவங்களை யும் அறிந்துகொள்வர்.	K1,K2
CO 2	உயிர், மெய், உயிர்மெய்த் துணைக் குறியீடுகளை அறிந்து அவற்றை எழுதும் திறன் பெறுவர்.	K2
CO 3	ஒரு எழுத்துக்கு ஒரு ஒலி, ஒரு ஒலிக்கு ஒரு எழுத்து என்ற தமிழின் உச்சரிப்பு - வரிவடிவத் தொடர்பை உணர்வர்.	K3,K4
CO 4	சில அடிப்படையான மொழி இலக்கண விதிகளை அறிந்து பயன்படுத்துவர்	K3,K5
CO 5	தமிழ்நாட்டுச் சூழலில் அன்றாடத் தேவைகளை நிறைவேற்றிக்கொள்ள ஏற்ற மொழிப் பயன்பாடுகளை அறிவர்.	K4,K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

Unit - I	**உயிரெழுத்துகள், மெய்யெழுத்துகள், உயிர்மெய் எழுத்துகள்**
	உயிர், மெய், உயிர்மெய்த் துணைக் குறியீடுகள், குறில்-நெடில், வல்லினம்-மெல்லினம்-இடையினம் - எழுத்துகளின் ஒலிப்பு முறையையும் எழுதும் முறையையும் கற்றல்.
Unit - II	**ஒரெழுத்து ஒருமொழியும் இன்றியமையாத பெறற்சொற்களும்**
	ஒரெழுத்துச் சொற்கள் - பல எழுத்துச் சொற்கள் - சொற்பொருள் அறிதல் - நாள், மாதம், எண் பெயர்கள் அறிதல் - பருவங்கள் அறிதல் - விலங்குகள், தாவரங்கள், உடல் உறுப்புகள், உறவுப் பெயர்கள், ஊர்ப் பெயர்கள், போன்றவற்றை அறிதல்.
Unit - III	**சொல் வகைகளும் சொற்பயன்பாடும்**
	எண் அடை, பெயரடை, வினையடை, இடைச்சொற்கள் இணைப்பு, வேற்றுமை உருபு இணைப்பு போன்ற மொழி விதிகளைக் கற்பித்தல்.
Unit - IV	**பிழையின்றிப் பேசுதலும் எழுதுதலும்**
	திணை-பால்-எண்-இடம்-காலம் ஆகியவற்றை அறிதல். பொதுவாக இவற்றில் ஏற்படும் பிழைகளை உணர்த்திச் சரிசெய்தல்.

Unit - V	மொழிப் பயன்பாட்டு பயிற்சி
	• ஆர்வமூட்டும் நிகழ்ச்சி அல்லது சிறிய கதையைச் சொல்லச் செய்தல் / படிக்கச் செய்தல்.
	• சூழல்சார் (கல்லூரி, நூலகம், உணவகம், பேருந்து-இரயில்-விமான நிலையங்கள், அங்காடிகள்) உரையாடல்களை மாணவர்களிடையே நிகழ்த்துதல்.
	• கதையினைச் சொல்லச் சொல்ல எழுதச் சொல்லுதல்.
	• திரைப்படம் அல்லது திரைப்படப் பாடல் குறித்து மாணவர்களிடையே குழுக் கலந்துரையாடல் செய்யச் சொல்லல்.
Text book (s)	
•	அடிப்படைத் தமிழ்-1 (Basic Tamil-I)
Reference Books / Websites	
•	தமிழில் நாமும் தவறில்லாமல் எழுதலாம் - பொற்கோ, பாரி நிலையம், சென்னை, 2003.
•	www.tamilvu.org/ta/content/சான்றிதழ்
•	www.thamizham.net/kal/ttenglish/cards32-u8.htm
•	www.thamizham.net/kal/ttenglish/index-u8.htm
•	www.ilearntamil.com
•	www.wikihow.com/Learn-Tamil
•	www.ilovelanguages.org/tamil.php
•	www.ling-app.com/learn-tamil
•	www.ilearntamilnow.com
•	www.17-minute-languages.com/en/learn-tamil
•	www.hindustanitongue.com/learn-tamil
•	www.duolingo.com/course/ta/en/Learn-Tamil
•	www.mylanguages.org/learn_tamil.php
•	www.learn101.org/tamil.php
•	www.goethe-verlag.com/book2/EN/ENTA/ENTA002.HTM
•	www.karky.in/payilcourses/index.html
•	www.tamilvu.org/ta/பயணியர்-தமிழ்
•	www.languagetrainers.com/blog/tamil-words/
•	www.thamizham.net/kal/tamil.htm
•	www.worldtamilacademy.com
•	www.outsourcingtranslation.com/resources/phrases/tamil-sentences.php
•	www.ling-app.com/ta/basic-words-in-tamil/
•	www.thirutamil.com/article/20-easy-thirukkural-in-tamil/
•	www.chennailibrary.com/avvai/kondraivendan.html
•	www.tamilvu.org/ta/content/புதிய-பாடத்திட்டம்-2022
•	www.tamilvu.org/ta/content/மின்-கற்றலுக்கான-இணையத்தளம்
•	www.ling-app.com/ta/tamil-culture
•	www.caleidoscope.in/art-culture/tamil-nadu-culture-3

Apps
• www.kaniyantamil.com/best-mobile-apps-tamil-learning/
• Tamil 101 - Learn to Write
• https://payil.app/tva/ta/
• https://tamil-101.en.aptoide.com/app
• Ling - Learn Tamil Language
• Tamil by Nemo
• Learn Tamil Quickly

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
CLO 1	3	2	3	2	2	3	2	2	2	2	3	3
CLO 2	2	2	2	3	3	2	2	3	3	2	2	2
CLO 3	3	3	3	2	2	3	3	2	3	3	3	3
CLO 4	3	2	3	3	3	3	2	2	2	2	3	2
CLO 5	2	2	3	3	2	2	3	3	2	3	3	2
Strong - 3, Medium - 2, Low - 1												

செ‌ன்னைப் பல்கலைக்கழகம்
University of Madras

Part-I

பொதுத் தமிழ் - பாடத்திட்டம்

General Tamil - Syllabus

4 பருவங்கள் (இரண்டாம் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

பொதுத்தமிழ்- 2

தமிழ் இலக்கிய வரலாறு -2

முதலாம் ஆண்டு – இரண்டாம் பருவம்

Course Code	Course Name	category	L	T	P	S	Credits	Ins.Hrs	CIA	External	Total
100L2AU	பொதுத்தமிழ் -2 தமிழ் இலக்கிய வரலாறு -2	Supportive Y	-	-	-	3	6	25	75	100

Learning Objectives

- முதலாமாண்டுப் பட்ட வகுப்பு மாணவர்களுக்குத் தமிழ் மொழி இலக்கியங்களை அறிமுகம் செய்தல்
- தமிழ் இலக்கியப் போக்குகளையும், இலக்கணங்களையும் மாணவர் அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்

Expected Course Outcomes

On the Sucessful completion of the Course, Students will be able to

இப்பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	சிற்றிலக்கியங்களின்வழி இலக்கியச் சுவையினையும் பண்பாட்டு அறிவினையும் பெறுவர்	K4
CO 2	புதுக்கவிதை வரலாற்றினை அறிந்து கொள்வர்	K5, K6
CO 3	திராவிட இயக்க இலக்கியங்களைக் கற்பதன் மூலம் மொழி உணர்வு , இன உணர்வு, சமத்துவம் சார்ந்த சிந்தனைகளைப் பெறுவர்	K3
CO 4	தமிழ்மொழியைப் பிழையின்றி எழுதவும், புதிய கலைச்சொற்களை உருவாக்கவும் அறிந்து கொள்வர்	K3
CO 5	போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்குத் தமிழ்ப் பாடத்தினைப் பயன்கொள்ளும் வகையில் பயிற்சி பெறுவர்.	K2

K1 - Remember; K2 - Undestand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

அலகு-1	தமிழ் இலக்கிய வரலாறு அறிமுகம்.

1. சிற்றிலக்கியம்; குறவஞ்சி, கலம்பகம், உலா, பரணி, பள்ளு, பிள்ளைத்தமிழ், தூது, அந்தாதி.
2. தனிப்பாடல் அறிமுகம்
3. இக்கால இலக்கியம் ;கவிதை, சிறுகதை,நாடகம், உரைநடை. , திராவிட இயக்கம் வளர்த்த தமிழ்.

அலகு-2	சிற்றிலக்கியக்கமும்,தனிப்பாடலும்

சிற்றிலக்கியம்;

- கலிங்கத்து பரணி- விருந்தினரும் வறியவரு நெருங்கி யுண்ணரும் - முதல் - கேட்பாரைக் காண்மின் காண்மின் - வரை
- திருக்குற்றாலக் குறவஞ்சி - வானரங்கள் கனிகொடுத்து
- முக்கூடற் பள்ளு - ஆற்று வெள்ளம் நாளை வரத்
- அபிராமி அந்தாதி- கலையாத கல்வியும் குறையாத வயதும் (பதினாறு செல்வங்கள்)
- திருவரங்கக் கலம்பகம் – மறம் -பிள்ளைப் பெருமாள் ஐயங்கார்-பேசவந்த தூத செல்லரித்த ஓலை செல்லுமோ
- தமிழ்விடு தூது முதல் பத்து கண்ணிகள்

தனிப்பாடல்;

- வான்குருவி யின்கூடு -ஒளவையார்
- ஆமணக்குக்கும் யானைக்கும் சிலேடை ;முத்திருக்கும் கொம்பசைக்கும் மூரித்தண் டே - காளமேகப் புலவர்
- இம்பர் வான் எல்லை இராமனையே பாடி -வீரராகவர்
- நாராய் நாராய் -சத்தி முத்தப் புலவர்

அலகு-3	இக்கால இலக்கியம்- 1

1. பாரதியார் பாரத சமுதாயம் வாழ்கவே
2. பாரதிதாசன் - சிறுத்தையே வெளியில் வா
3. நாமக்கல் கவிஞர்-கத்தியின்றி
4. தமிழ் ஒளி – மீன்கள் (அந்தி நிலா பார்க்க வா)
5. ஈரோடு தமிழன்பன் – எட்டாவது சீர் (வணக்கம் வள்ளுவ)

சிறுகதைகள்;_

1. புதுமைப்பித்தன் - கடிதம்
2. ஜெயகாந்தன் -வாய்ச் சொற்கள் (மாலை மயக்கம் தொகுப்பு)
3. ஆர். சூடாமணி - அந்நியர்கள்

உரைநடை ;

1. மு வ கடிதங்கள் - தம்பிக்கு நூலில் முதல் இரண்டு கடிதங்கள்

அலகு-4	இக்கால இலக்கியம்- 2

1. தந்தை பெரியார் – திருக்குறள்(மாநாட்டு) உரை
2. பேரறிஞர் அண்ணா – இரண்டாம் உலகத் தமிழ் மாநாட்டு உரை
3. கலைஞர் மு. கருணாநிதி – தொல்காப்பிய பூங்கா –எழுத்து -முதல் நூற்பா கட்டுரை

நாடகம் / திரைத்தமிழ் :

1. வேலைக்காரி –திரைப்படம்
2. ராஜா ராணி -சாக்ரடீஸ் -ஓரங்க நாடகம்

இதழியல் தமிழ் ;

முரசொலி கடிதம் 1. செம்மொழி வரலாற்றில் சில செப்பேடுகள்	
அலகு-5	மொழிப் பயிற்சி

சொல் வேறுபாடு / பிழை தவிர்த்தல்

- வாசிப்பது – வாசிப்பவர்
- சுவர்- சுவரில்
- வயிறு - வயிற்றில்
- கோயில்- கோவில்
- கறுப்பு – கருப்பு
- இயக்குநர்-இயக்குனர்
- சில்லறை-சில்லரை
- முறித்தல் – முரித்தல்
- மனம்-மனசு- மனது
- அருகில்-அருகாமையில்
- அக்கரை- அக்கறை
- மங்கலம்- மங்களம்.

பயிற்சி :

- பிழையான சொற்களை ஒரு பத்தியில் கொடுத்து அந்தப் பிழையான சொற்களைச் சரியாக எழுதச் செய்தல்
- சிறிய பத்தி ஒன்றை ஆங்கிலத்தில் கொடுத்து அதனைத் தமிழில் மொழிபெயர்க்க வைத்தல்.

Text books

•	.

Reference Books

- மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அக்காதெமி, புதுடெல்லி.
- மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
- தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
- தமிழ் இலக்கிய வரலாறு –முனைவர்.சிற்பி பாலசுப்ரமணியம், முனைவர்.சொ.சேதுபதி
- புதிய தமிழ் இலக்கிய வரலாறு– முனைவர்.சிற்பி பாலசுப்ரமணியம்,நீல.பத்மநாபன்
- தமிழ் இலக்கிய வரலாறு - டாக்டர்.அ.கா.பெருமாள்
- தமிழ் இலக்கிய வரலாறு –முனைவர். ப.ச.ஏசுதாசன்
- தமிழ் இலக்கிய வரலாறு - ஸ்ரீ குமார்
- வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு–பாக்கியமேரி
- தமிழ் பயிற்றும் முறை, பேராசிரியர் ந. சுப்புரெட்டியார் - மணிவாசகர் பதிப்பகம், சிதம்பரம்

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]
Web Sources
• https://www.chennailibrary.com/   • https://www.sirukathaigal.com   • https://www.tamilvirtualuniversity.org   • https://www.noolulagam.com   • https://www.katuraitamilblogspot.com

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2	1.
CLO1	3	2	3	3	3	2	2	2	3	2	3	2	
CLO2	3	3	2	2	2	3	2	3	3	2	2	2	
CLO3	3	2	3	3	2	2	2	3	2	3	3	2	
CLO4		3	3	2	2	2	3	2	3	2	3	3	
CLO5	3	3	2	2	2	3	3	2	2	2	3	3	

Strong -3,Medium-2,Low-1

UNIVERSITY OF MADRAS

UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE

EXISTING SYLLABUS (22-23) FOLLOWED FOR THE ACADEMIC YEAR 2023-2024

FOUNDATION COURSE: PART-I HINDI PAPER-II

100L2E

Inst.Hrs. : 6	**Year : I**
Credits : 3	**Semester : II**

Paper – II- ONE ACT PLAY, SHORT STORY & TRANSLATION		
Duration:	1 Semester	
Programme Outcomes:	1. Identify the features, elements of literary forms i.e. Drama, one act play, Novel and Short Stories, techniques of Translation 2. Understand the Ideology, message and aims of the literary works and writers 3. Obtain the knowledge of method of critical study of Literary works. 4. Obtain the skills of summerise, interpretation of contexts, and practice of translation 5. Employ the knowledge of translation and language and professional skills.	
Programme Specific Outcomes:	1. Basic knowledge for higher studies 2. Basic Knowledge of Hindi literature and its trends 3. Language skills spoken and writing skills 4. Basic idea of critical and analytical study of literature. 5. Obtains knowledge of Translation of different subjects	
Course Objectives	1. Identifies the writers, theme and aims of literary works	K1
	2. Understand and summarise the theme of one act plays and short stories and their techniques	K2
	3. Explains the methods and techniques of Translation of different fields	K2
	4. Evaluate the theme and artistic skills of One Act Plays and short stories and writers	K5
	5. Conceive the basic knowledge of literary themes and translation	K6
Pre-requisites, if any:	Basic Knowledge of Hindi Fiction and Translation	
UNITS		
I	1. Auranzeb ki Aakhiri Raat 2. Mukthidhan 3. Practice of Annotation Writing 4. Practice of Summary and Literary evaluation Writing	
II	1. Laksmi ka Swagat 2. Mithayeewala 3. Practice of Summary and Literary evaluation Writing 4. Translation Practice. (English to Hindi)	

III	1.	Basant Ritu ka Natak
	2.	Seb Aur Dev
	3.	Practice of Summary and Literary evaluation Writing
	4.	Introduction to Translation Practice
IV	1.	Bahut Bada Sawal
	2.	Vivah ki Teen Kathayen
	3.	Practice of Summary and Literary evaluation Writing
	4.	Translation Practice. (English to Hindi)
V	1.	Translation Practice. (English to Hindi)

Course Outcomes	1. Identifies the nature, features, elements of One Act Plays and Short Stories and skills of Translation 2. Understand the theme, aim of lessons and obtain skills of Evaluation. 3. Evaluate the thought, ideology, expressional and artistic skills of writers and contextual meanings 4. Obtain skills of summarizing, evaluating and critical study 5. Employ the techniques and skills of Literature and Translation.

Reading List **(Print and Online)**	1. https://hindisarang.com/hindi-ekaanki-ekaankikar/ 2. https://hi.wikipedia.org/ wiki/हिन्दी_कहानी
Recommended Texts	**1. ONE ACT PLAY** (Detailed Study): **AATH EKANKI** **Edited By:** Devendra Raj Ankur, Mahesh Aanand Vani prakashan, 4695, 21-A Dariyagunj, New Delhi – 110 002 **2. SHORT STORIES** (Non-Detailed Study): **SWARNA MANJARI** **Edited by:** Dr. Chitti. Annapurna, Rajeswari Publications, 21/3, Mothilal Street, (Opp.Ranganathan St.), T.Nagar, Chennai–600017. 3. Prayojan Moolak Hindi : Dr. Syed Rahamathulla, Poornima Prakashan, 4/7 B Begum III Street, Royapettah, Chennai – 14. 4. Anuvad Abhyas Part III : Dakshin Bharat Hindi Prachar Sabha, T. Nagar, Chennai-17.

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	S	S	S
CO 2	S	S	S	S	L
CO 3	M	S	S	S	L
CO 4	M	S	S	S	L
CO 5	S	S	S	S	S

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

Programme:	**I & II UG – Second Language - SANSKRIT**
Programme Code:	**BFC-LS22**
Duration:	**2 years**
Programme Outcomes:	After successful completion of the course, learners will be able to: 1. Create simple sentences using different grammatical tenses 2. Sensitize the students to the functioning of the language 3. Know the historical and cultural perspective of literary trends and movements in Sanskrit and in its literature 4. Define the origin of Sanskrit Literature 5. Demonstrate different teaching methodologies 6. Translate simple passages 7. Consolidate their communication skills in both spoken and written Sanskrit.
Programme Specific Outcomes:	1. Understand and appreciate the aesthetical, social, political, cultural, etc., values expressed in various prescribed texts 2. Apply different grammatical rules to their reading and writing assignments 3. Identify the base words of nouns and different tenses 4. Read, understand, write and speak in simple Sanskrit 5. Translate simple sentences related to the themes given

List of Courses:

Semester	Course Code	Title of the Course	Core/Elective/ Soft Skill	Credits
I	BFC-LS001	Paper I – Poetry, Grammar and History of Sanskrit Literature	C	3
II	BFC-LS002	Paper II – Prose, Grammar and History of Sanskrit Literature	C	3
III	BFC-LS003	Paper III – Drama, Grammar and History of Sanskrit Literature	C	3
IV	BFC-LS004	Paper IV – Alankara, Didactic & Modern literatures and Translation	C	3

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

100L1G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-I

Inst.Hrs. : 6	**Year : I**
Credits : 3	**Semester : I**

Paper I – Poetry, Grammar and History of Sanskrit Literature

Course Outcomes	1. Remember the usage of grammatical tenses in constructing sentences in dialogue. 2. Apply the rules of usage in practice exercises and identify errors 3. Explain the nuances in the usage of various grammatical tenses and aspects 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in French 5. Communicate in French and summarize the given text	
Course Objectives	Understand the basic Sanskrit sentence structure	K1
	To provide the glimpses of the rich Sanskrit literary tradition through reading the literary composition	K2
	Explain the language of this Mahakavya which is highly elaborate and polished with continual play upon words and variety of metres	K3
	Analyse and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate grammatical nature of verses	K5
Units		
I	Introduction to Sanskrit (Alphabets, Two letter words and three letter words) Grammar: *akārāntaḥ puṁliṅgaḥ śabda-s* - 1. बाल (*Bāla*) and 2. देव (*Deva*) *ākārāntaḥ strīliṅgaḥ śabda-s* - 1. बाला (*Bālā*) and 2. लता (*Latā*) *akārāntaḥ napuṁsakaliṅgaḥ śabda-s* - 1. फल (*Phala*) and 2. वन (*Vana*)	
II	Introduction to *Rāmāyana, Kālidāsa* and his poetic works Text: *Raghuvaṁśa* (Canto I) Verses 1-15	
III	Introduction to the works of *Bhāravi* - Text: *Raghuvaṁśa* (canto I) Verses 16-30	
IV	Introduction to the works of *Śrī Harṣha* - Text: *Raghuvaṁśa* (Canto I) Verses 31-45	
V	Grammar: Conjugations - *Laṭ lakāra-s* – (Present tense) (i) गच्छति (*Gacchati*) (ii) तिष्ठति (*Tiṣṭhati*) (iii) पठति	

	(*Paṭhati*) (iv) नृत्यति (*Nṛtyati*) (v) कुप्यति (*Kupyati*) (vi) कथयति (*Kathayati*) (vii) गणयति (*Gaṇayati*) (viii) अस्ति (*Asti*) (ix) करोति (*Karoti*) (x) शृणोति (*Śṛṇoti*) Indeclinables (Avyayaani) - अपि (*api*), कदा (*kadā*), च (*ca*), अद्य (*adya*), विना (*vinā*), सह (*saha*), तत्र (*tatra*), किम् (*kim*), यदि (*yadi*) - तर्हि (*tarhi*), यथा (*yathā*) - तथा (*tathā*) Prefixes (*Upasargas*) - आङ् (*āṅ*), वि (*vi*), परि (*pari*), अनु (*anu*), अधि (*adhi*), उत् (*ut*), प्रति (*prati*), उप (*upa*), प्र (*pra*) निर् (*nir*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - I* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	M	S	S
CO 2	S	S	S	S	S
CO 3	S	S	M	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

100L2G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-II

Inst.Hrs. : 6   **Year   : I**

Credits   : 3   **Semester : II**

Paper II – Prose, Grammar and History of Sanskrit Literature

Course Outcomes	1. Understand and apply grammatical concepts in drafting sentences and paragraphs 2. Apply the rules and regulations in handling usage of Lrt lakara and Asmad Sabdah, practice exercises and identify errors 3. Form an idea of the aesthetic expressions that make Sanskrit composition get the position of pride in world literature 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in Sanskrit 5. Appreciate the art of employment of Alankaras in a prose form of poetry	
Course Objectives	Provide acquaintance with prose literature in Sanskrit through a study of one of the best texts of prose, which would pave the way for gaining sufficient grounding in the language	K1
	Enumerate various grammatical tenses and use them to communicate in Sanskrit language	K2
	Summarize the stories of Panchatantra and discuss in	K3
	Analyze and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate and comprehend text passages	K5
Units		
I	Introduction to Prose literature in Sanskrit Grammar: *ikārāntaḥ puṁliṅgāḥ śabdāḥ* - 1. कवि (*Kavi*) and 2. रवि (*Ravi*) *ikārāntaḥ strīliṅgaḥ śabdaḥ* - 1. मति (*Mati*) *īkārāntaḥ strīliṅgaḥ śabdaḥ* - 1. नदी (*Nadī*) *ikārāntaḥ napuṁsakaliṅgaḥ śabdaḥ* 1. वारि (*Vāri*)	
II	Introduction to *Māhābhārata,* the author of बालरामायणम् (*Balarāmāyaṇam)* and his works Text: *Bālakāṇḍam* of *Balarāmāyaṇam*	
III	Introduction to the works of *Baṇa* (*Kādambarī* and *Harṣacaritam*), *Daṇḍin* (*Daśakumāracaritam* and *Avantisundarīkathā*) and *Subandhu* (*Vāsavadattā*)	
IV	Introduction to Historical *Kāvyas* in Sanskrit - The works of *Kalhaṇaḥ, Bilhaṇaḥ, Bāṇaḥ* and *Pravarasenaḥ*	

4

V	Grammar:
	Conjugations - *Laṅ lakāraḥ* (Past tense)
	(i) अगच्छत् (*Agacchat*) (ii) अतिष्ठत् (*Atiṣṭhat*) (iii) अपठत् (*Apaṭhat*)
	(iv) अनृत्यत् (*Anṛtyat*) (v) अकुप्यत् (*Akupyat*) (vi) अकथयत् (*Akathayat*) (vii) अगणयत् (*Agaṇayat*) (viii) आसीत् (*Asīt*) (ix) अकरोत् (*Akarot*)
	(x) अशृणोत् (*Aśṛṇot*)
	Indeclinables:
	(a) तुमुन् (*Tumun*) suffix ended words (Infinitive forms)
	(i) गन्तुम् (*Gantum*) (ii) स्थातुम् (*Sthātum*) (iii) पठितुम् (*Paṭhitum*)
	(iv) नर्तितुम् (*Nartitum*) (v) कोपितुम् (*Kopitum*) (vi) कथयितुम् (*Kathayitum*) (vii) गणयितुम् (*Gaṇayitum*) (viii) भवितुम् (*Bhavitum*) (ix) कर्तुम् (*Kartum*) (x) श्रोतुम् (*Śrotum*)
	(b) क्त्वा (*Ktvā*) suffix ended words (Past passive participles)
	(i) गत्वा (*Gatvā*) (ii) स्मृत्वा (*Smṛtvā*) (iii) गणयित्वा (*Gaṇayitvā*)
	(iv) पठित्वा (*Paṭitvā*) (v) कृत्वा (*Kṛtvā*)
	(c) ल्यप् (*Lyap*) suffix ended words (Past passive participles)
	(i) आगत्य (*Āgatya*) (ii) विस्मृत्य (*Vismṛtya*) (iii) विगणय्य (*Vigaṇayya*)
	(iv) प्रपठ्य (*Prapaṭhya*) (v) अनुकृत्य (*Anukṛtya*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - II* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	S	M	S
CO 2	S	M	S	S	S
CO 3	S	S	S	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

5

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L3G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-III

Inst.Hrs. : 6	**Year : II**
Credits : 3	**Semester : III**

Paper III – Drama, Grammar and History of Sanskrit Literature

Course Outcomes	1. Be familiar with the style of the great Sanskrit Dramatist Bhasa 2. Be able to appreciate the aesthetical, social, political, cultural, etc., values expressed in prescribed composition 3. Understand the structural patterns of Sanskrit dramatic composition 4. Develop the finer and minor nuances of Nataka form of drama 5. Analyze the literary texts
	UNITS
I	Introduction to Dramaturgy – Ten types of Drama - Characteristics and features (*Nāndī, Sūtradhāra, Sthāpanā* and *Bharatavākyam*) of Sanskrit Dramas. Prose Text: *Karṇabhāram* - Page. 01 - 10 (till 10 *Slokās*)
II	Characteristics and features (*Vastu, Netā* and *Rasas*) of Sanskrit Drama - Prose Text: *Karṇabhāram* - Page. 11 - 20 (till 17 *Slokās*)
III	Authorship of 13 Trivandrum play of *Bhāsa* - Introduction to the Dramas of *Kālidāsa, Bhavabhūti, Harṣavardhana* and *Rājaśekhara* Text: *Karṇabhāram* - Page. 21 - 32 (Upto the end)
IV	Introduction to the dramatic works of *Viśākhadatta, Śūdraka, Bhaṭṭanārāyaṇa* and *Murāri* - Introduction to Allegorical dramas 1. *Prabodhacandrodaya* and 2. *Saṅkalpasūryodaya*
V	Introduction to *Campū* literature 1. *Bhojacampū* 2. *Viśvaguṇādarśacampū* and 3. *Nalacampū* Grammar – *Lṛṭ lakārāḥ* (Future tense) (i) गमिष्यति (*Gamiṣyati*) (ii) स्थास्यति (*Sthāsyati*) (iii) पठिष्यति (*Paṭhiṣyati*) (iv) नर्तिष्यति (*Nartiṣyati*) (v) कोपिष्यति (*Kopiṣyati*) (vi) कथयिष्यति (*Kathayiṣyati*) (vii) गणयिष्यति (*Gaṇayiṣyati*) (viii) भविष्यति (*Bhaviṣyati*) (ix) करिष्यति (*Kariṣyati*) (x) श्रोष्यति (*Śroṣyati*) Declensions: (*Sarvanāmaśabdāḥ*) - 1. तद् शब्दः (*Tad śabdaḥ*) in all genders 2. अस्मद् शब्दः (*Asmad śabdaḥ*) 3. युष्मद् शब्दः (*Yuṣmad śabdaḥ*)

6

Course Objectives	Understand the structure and use of different phrases and Idioms in Sanskrit Drama and grammatical aspects of *Karṇabhāram*	K2
	Enhance one's ability to converse freely in the language, which is considered to be a specialized skill as far as the Sanskrit Language goes	K2
	Draft and summarize the literary texts	K3
	Identify and apply different grammatical peculiarities	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṃskṛta-Sukhabodhinī - III* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	M	S	S
CO 2	S	S	S	S	S
CO 3	S	M	M	S	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L4G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-IV

Inst.Hrs. : 6   **Year   : II**
Credits   : 3   **Semester : IV**

Paper IV – Alankara, Didactic & Modern literatures and Translation

Course Outcome	1. Apply the usage of compound words 2. Differentiate the alankaras 3. Translate the prose passages prescribed 4. Identify and apply different grammatical tenses of "Mahabharata" related translation 5. Analyze and critically assess the literary texts
UNITS	
I	Introduction to Didactic literature (*Pañcatantram* and *Hitopadeśaḥ*) Text: The lion and the hare शशकसिंहकथा (*Śaśakasiṃhakathā*) from Pañcatantram and The jackal and the elephant शृगालहस्तिकथा (*Śṛgālahastikathā*) a story from *Mitralābhaḥ* of *Hitopadeśaḥ*
II	*Alaṅkārāḥ - i. Upamā, ii. Rūpakam, iii. Ullekhaḥ, iv. Utprekṣā and v. Vyatirekaḥ*
III	Introduction to Modern literature - Introduction to अर्थशास्त्रम् (*Artha śāstram*) of चाणक्यः (*Cāṇakyaḥ*) - Introduction to मयमतम् (*Mayamatam*) - Introduction to नीतिद्विषष्टिका (*Nītidviṣaṣṭhikā*) - *Slokās* - 1 to 10 - Introduction to the life history of श्रीआदिशङ्कराचार्यः (*Śrī -Ādiśaṅkarācāryaḥ*), श्रीरामाजानुचार्यः (*Śrī Rāmānujācāryaḥ*) and श्रीमध्वाचार्यः (*Śrī Madhvācāryaḥ*)
IV	Introduction to Modern literature in Sanskrit - Text: तिरुक्कुरळ् संस्कृतानुवादः (Sanskrit translation of Tirukkural) *Slokās* 1 to 10 ईश्वरवन्दनम् (*Kaḍavuḷ Vāzhththu*) by कलियन् रामानुजजीयर् (*Kaliyan Rāmānujajīyar*) नालडियार् (*Nālaḍiyār*) translated by श्री एस्. एन्. रामदेशिकः (*Śrī S. N Rāmadeśika*) - *Slokās*: 1 to 5
V	Translation from prose section Unit - I stories Grammar: Conjugation - *Loṭ lakārāḥ* (Imperative mood) (i) गच्छतु (*Gacchatu*) (ii) तिष्ठतु (*Tiṣṭhatu*) (iii) पठतु (*Paṭhatu*) (iv) शृणोतु (*Śṛṇotu*) (v) करोतु (*Karotu*)

8

Course Objectives	Demonstrate the usage of connecting words	K2
	Understand the alankaras which are used in devotional lyrics	K2
	Draft and summarize the literary texts	K3
	Identify the meaning, types of figure of speech of the prescribed text	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - IV* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	S	S
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	S	M	S	S	S
CO5	S	S	S	S	M

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS

U.G. AND FIVE YEAR INTEGRATED PG DEGREE PROGRAMS

FOUNDATION COURSE: PART I – ARABIC

(EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024)

Programme:	**U.G. AND FIVE YEAR INTEGRATED P.G. DEGREE PROGRAMS** **FOUNDATION COURSE: PART I – ARABIC**
Programme Code:	BFC-LA23
Duration:	**4 Semesters**
On successful completion of this program, the graduates are expected to achieve the following:	
Programme Outcomes:	1. Acquire the knowledge of the structure of Arabic words 2. Acquaint with the knowledge of basic Arabic grammar 3. Become familiar with the knowledge of phonetic system of Arabic language 4. Able to communicate in Arabic 5. Have the knowledge of moral values in the light of Quran and Hadith
Programme Specific Outcomes:	1. Understand the sounds and phrasing of Arabic language. 2. Learn the basic Arabic grammar 3. Develop communication skills in Arabic 4. Acquire new vocabulary in Arabic 5. Learn the moral values of the Holy Quran and Sunnah

List of Courses:

Semester	Course Code	Title of the Course	Foundation Course	Credits
I	100L1H	Paper I : Prose	FC	3
II	100L2H	Paper II : Grammar	FC	3
III	200L3H	Paper III : Communication Skill in Arabic	FC	3
IV	200L4H	Paper IV : Quran and Hadith	FC	3

1

Course I	Course Code	Title of the Course	Credits
FC	100L1H	Paper I : Prose	3

Course Outcomes	1. Understand the correct pronunciation of Arabic letters 2. Understand the structure-based composition. 3. Acquire new vocabulary in Arabic 4. Read the Arabic sentences without diacritical marks 5. Able to write the simple sentences in Arabic without errors.
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the structure of Arabic language. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.

Units	
I	(دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثالث عشر
IV	من الدرس الرابع عشر إلى الدرس الثامن عشر
V	من الدرس التاسع عشر إلى الدرس الثالث والعشرين

2

Prescribed Text Book	دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم
	Duroos Al-Lugha Al-Arabiyya – Part I, By Dr. V. Abdur Rahim
Reading List (Print and online)	معجم الكلمات الواردة في دروس اللغة العربية لغير الناطقين بها
	مفتاح دروس اللغة العربية لغير الناطقين بها
	القراءة الراشدة — الشيخ أبو الحسن علي الحسني الندوي
	القراءة المفيدة — الدكتور محمد يوسف كوكن العمري
	منهاج العربية — السيد النبي حيدرآبادي
	www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

3

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course II	Course Code	Title of the Course	Credits
FC	100L2H	Paper II : Grammar	3
Course Outcomes	1. Able to use basic grammatical structure. 2. Develop reading skills and reading speed 3. Acquire new vocabulary in Arabic 4. Understand the different types of sentences. 5. Able to construct simple sentences in Arabic		
Pre-requisites, if any:	Nil		
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the correct usage of Arabic grammar. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.		
Units			
I	(قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله) من الدرس الأول إلى الدرس الرابع		
II	من الدرس الخامس إلى الدرس الثامن		
III	من الدرس التاسع إلى الدرس الثاني عشر		

4

IV	من الدرس الثالث عشر إلى السادس عشر
V	من الدرس السابع عشر إلى الدرس العشرين
Prescribed Text Book	قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله Basic Arabic Grammar, By Dr. Syed Rahmathullah
Reading List (Print and online)	النحو الواضح — علي الجارم ومصطفى أمين دليل النحو الواضح — الدكتور بشير أحمد جمالي سهل العوامل _ الدكتور تاج الدين المناني النحو الميسر للكبار والصغار — علي محمود عقيلي القواعد التطبيقية في اللغة العربية — الدكتور نديم دعكور www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

5

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	3	1

3-Strong   2-Medium   1-Low

Course III	Course Code	Title of the Course	Credits
FC	200L3H	Paper III : Communication Skill in Arabic	3

Course Outcomes	1. Understand the basics of Arabic language. 2. Learn the structure of Arabic words. 3. Familiarize with the phonetic system of Arabic. 4. Able to communicate in Arabic 5. Able to translate from Arabic to English and vice versa
Pre-requisites, if any:	Nil
Course Objectives	1. Understand the sounds and phrasing of Arabic language. 2. Acquire new vocabulary and apply in context. 3. Develop communication skills in Arabic. 4. Understand the different aspects of communication. 5. Learn to communicate in everyday interactions.
Units	
I	(الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول — السعيد محمد بدوي وفتحي علي يونس) التعارف – في المطار (١)
II	في الفندق – في المطعم
III	في البنك – عند الطبيب (١)

6

IV	في الطريق – في مكتب البريد
V	في السوق (١) – في السوق (٢)
Prescribed Text Book	الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول – السعيد محمد بدوي وفتحي علي يونس Al Kitaab Al Asaasi Fi Taleem Al Lugha Al Arabiyya Li Ghair An Naatiqeena Biha - Part I, By Sayeed Muhaamad Badawi and Fathi Ali Yunus
Reading List (Print and online)	A Practice Book on Gulf Arabic, By Dr. Abdul Jaleel. T Arabic Conversation Book, By Mohd. Harun Rashid and Khalid Perwez A Hand book of Commercial Arabic by Dr. Aboobacker K.P العربية لغير العرب – د. مصطفى حسن الريس، الأزهر العربية للحياة – جامعة الملك سعود القراءة العربية لغير العرب – وزارة التربية بالكويت www.talkinarabic.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

7

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course IV	Course Code	Title of the Course	Credits
FC	200L4H	Paper IV : Quran and Hadith	3
Course Outcome	1. Know the principal textual sources of the Islamic tradition: The Qur'an and the Hadith. 2. Know the role of Quran and Hadith in the synthesis of Islamic faith and practice. 3. Understand the structure of Arabic grammar through Quran and Hadith. 4. Understand the methodology of translation of Quran and Hadith. 5. Understand the moral values of Quran and Hadith			
Pre-requisites, if any:	Nil			
Course Objectives	1. Know the importance of Quran and Hadith. 2. Understand the style of Quran and Hadith. 3. Understand the role of Quran and Hadith in the Islamic faith and law.			

8

	4. Know the structure of Arabic grammar through the examples from Quran and Hadith.
	5. Learn the cultural and moral values.
Units	
I	(١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم) سورة لقمان من الآية ١ إلى الآية ١٠
II	من الآية ١١ إلى ٢٠
III	من الآية ٢١ إلى ٣٤
IV	أحاديث سهلة من الحديث ١ إلى الحديث ١٠
V	من الحديث ١١ إلى الحديث ٢٠
Prescribed Text Book	١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم 1) Sooratu Luqman 2) Ahadeeth Sahlah By Dr. V. Abdur Rahim
Reading List (Print and online)	Tafsir Al-Jalalain The Noble Quran, Dr. Muhammad Muhsin Khan and Muhammad Taqi-Ud-Dhin Al-Hilali الأربعون النووية نصوص من الحديث النبوي الشريف، الدكتور ف. عبد الرحيم

9

		شرح أحاديث سهلة، الدكتور ش. عبد المالك
	https://quran.com/	
	https://sunnah.com/nawawi40	

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	1	2	3	3	3

3-Strong   2-Medium   1-Low

10

UNIVERSITY OF MADRAS

FOUNDATION COURSE: FRENCH

SYLLABUS WITH EFFECT FROM 2023-2024

UG & 5 Year PG Integrated – SEMESTER – II

Foundation Course in French: Prescribed Text and Grammar-II

Course Outcomes	1. To ask for and give directions. 2. To give orders or commands using *Impératif* 3. To narrate events from the past using *Passé Composé* 4. Cite the ordinal numbers in French 5. Indicate the position of something using prepositions of place		
Course	Foundation Course in French	**Course Code**	**100L2K**
Title of the Course:	Prescribed Text and Grammar-II		
Credits:	3		
Pre-requisites, if any:	-		
Course Objectives	Revise and recall the French sentence structure	K1	
	Enumerate the various grammatical tenses and use them to communicate better in French	K2	
	Summarize and develop ideas from the documents after discussing it in detail	K2 and K3	
	Write and understand dialogues based on the themes done in class	K4	
	Evaluate and comprehend text passages	K5	
Units			
I	Unité 7: C'est où?		
II	Unité 8: N'oubliez pas !		
III	Unité 9: Belle vue sur la mer !		
IV	Unité 10: Quel beau voyage !		
V	Unité 11: Oh ! joli ! Unité 12: Et après ?		
Prescribed Text	Régine Mérieux & Yves Loiseau, **Units 7-12** of *Latitudes* **1** (A1 /A2), méthode de français, Didier, 2017 (Indian Edition)		

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	L	M	M	L	S	S	S	M	M	M
CO2	S	M	M	L	M	M	L	S	S	S	S	M	M
CO3	M	S	S	M	S	M	M	S	S	S	M	S	S
CO4	S	S	M	L	S	M	L	S	S	S	S	S	S
CO5	S	S	S	L	M	M	L	S	S	S	M	S	S

S-Strong   M-Medium   L-Low

SEMESTER II

Title of the Paper : Prescribed Text and Grammar-II

Prescribed textbook: Régine Mérieux & Yves Loiseau, **Units 7-12** *of Latitudes 1 (*Indian Edition), Paris, Didier, 2017**.**

Questions not to be asked from the Autoévaluation and Préparation au DELF

Paper setters to strictly adhere to the syllabus and ask questions only from the pages included in the syllabus. Questions should cover the entire syllabus.

QUESTION PAPER PATTERN

Time : 3 Hours   Maximum Marks : 75

Section A (10 x 2 = 20 Marks)
Answer any TEN questions
15 questions to be asked on cultural / civilisational aspects found in the prescribed textbook

Section B (5 x 5 = 25 Marks)
Answer any FIVE questions
8 Grammar exercises to be given from the prescribed textbook

Section C (3 x 10 = 30 Marks)
Answer any THREE
3 must be answered out of 5 topics (1 dialogue writing, 1 letter /email writing, 1 composition, 1 comprehension, 1 translation)

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UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

FIRST YEAR - SEMESTER II

PAPER II –GENERAL ENGLISH

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
100L2ZU	Part II	Y	Y	-	-	3	6	25	75	100

	Learning Objectives
LO1	To make students realize the importance of resilience
LO2	To enable them to become good decision makers
LO3	To enable them to imbibe problem-solving skills
LO4	To enable them to use tenses appropriately
LO5	To help them use English effectively at the work place.

Unit No.	Unit Title & Text	No. of Periods for the Unit
I	**RESILIENCE** **Poem** 1.1 Don't Quit – Edgar A. Guest 1.2 Still Here – Langston Hughes **Short Story** 1.3 Engine Trouble – R.K. Narayan 1.4 Rip Van Winkle – Washington Irving	20
II	**DECISION MAKING** **Short Story** 2.1 The Scribe – Kristin Hunter 2.2 The Lady or the Tiger - Frank Stockton **Poem** 2.3 The Road not Taken – Robert Frost 2.4 Snake – D. H Lawrence	20
III	**PROBLEM SOLVING** **Prose life Story** 3.1 How I taught My Grandmother to Read – Sudha Murthy **Autobiography** 3.3 How frog Went to Heaven – A Tale of Angolo 3.4 Wings of Fire (Chapters 1,2,3) by A.P.J Abdul Kalam	20

IV	**Tenses** 4.1 Present 4.2 Past 4.3 Future 4.4 Concord	15
V	**English in the Workplace** 5.1 E-mail – Invitation, Enquiry, Seeking Clarification 5.2 Circular 5.3 Memo 5.4 Minutes of the Meeting	15

Course Outcomes		
Course Outcomes	On completion of this course, students will;	
CO1	Realize the importance of resilience	PO1,PO7
CO2	Become good decision-makers	PO1,PO2,PO10
CO3	Imbibe problem-solving skills	PO4,PO6,PO9
CO4	Use tenses appropriately	PO4, PO5,PO6
CO5	Use English effectively at the work place.	PO3,PO8

Text Books (Latest Editions)	
References Books	
1	Martin Hewings. Advanced English Grammar. Cambridge University Press, 2000
2	SP Bakshi, Richa Sharma. Descriptive English.Arihant Publications (India) Ltd., 2019.
3.	Sheena Cameron, Louise Dempsey. The Reading Book: A Complete Guide to Teaching Reading. S & L. Publishing, 2019.
4	Barbara Sherman. Skimming and Scanning Techniques, Liberty University Press, 2014.
5.	Phil Chambers. Brilliant Speed Reading: Whatever you need to read, however. Pearson, 2013.
6.	Communication Skills : Practical Approach Ed.ShaikhMoula
	Ramendra Kumar. Stories of Resilience, Blue Rose Publications, 2020.

UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

Web Sources

1	Langston Hughes. Still Here https://poetryace.com/im-still-here
2	R. K. Narayan. Engine Trouble http://www.sbioaschooltrichy.org/work/Work/images/new/8e.pdf
3	Washington Irving. Rip Van Winkle https://www.gutenberg.org/files/60976/60976-h/60976-h.htm
4	Frank Stockton. The Lady or the Tigerhttps://www.gutenberg.org/ebooks/396

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	3	3	3	3	2	3	2
CO2	2	3	3	3	2	3	3	2	2	2
CO3	3	3	3	2	3	3	3	2	3	2
CO4	3	3	3	3	3	3	3	2	2	2
CO5	3	2	3	3	3	3	3	2	2	3

3 – Strong, 2 – Medium , 1 - Low

Mapping with Programme Specific Outcomes:

CO /PO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3
Weightage	15	15	15	15
Weighted percentage of Course Contribution toPos	3.0	3.0	3.0	3.0

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester: II
Introduction to Computer Architecture and Microprocessor		**125C2A**
Credits 5	**Lecture Hours:4 per week**	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To introduce the internal organization of Intel 8085 Microprocessor.
- To enable the students to write assembly language programs using 8085.
- To interface the peripheral devices to 8085 using Interrupt controller and DMA interface.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Remember the Basic binary codes and their conversions. Binary concepts are used in Microprocessor programming and provide a good understanding of the architecture of 8085.
CO2: Understanding the 8085 instruction set and their classifications, enables the students to write the programs easily on their own using different logic..
CO3: Applying different types of instructions to convert binary codes and analysing the outcome. The instruction set is applied to develop programs on multibyte arithmetic operations.
CO4: Analyse how peripheral devices are connected to 8085 using Interrupts and DMA controller.

Units	Contents
I	Digital Computers - Microcomputer Organization-Computer languages Number Systems: Decimal, Binary, Octal. Hexadecimal. Conversions: Conversion between all four number systems of integer and floating-point values. Data representation: fixed point and floating-point representation - Character codes
II	Addition, subtraction (9's Complement for decimal, 10's complement for decimal, 1's complement, 2's complement methods), multiplication and division of binary numbers. - Differentiate Binary and BCD representations - BCD to Binary and Binary to BCD conversions, BCD addition and Subtraction. 8085 Microprocessor: Architecture, Pinout and Signals – Functional block diagram -
III	8085 Instruction Set and addressing modes- 8085 sample programs using data transfer, arithmetic and JMP instructions– function calls in 8085
IV	The 8085 Interrupts – RIM AND SIM instructions-8259 Programmable Interrupt Controller-Direct Memory Access (DMA) and 8257 DMA controller.
V	Program control- RISC - Pipelining -Arithmetic instruction- RISC pipeline - Vector processing and Array processors.

TEXT BOOKS:

1. M.M. Mano, "Computer System architecture". Pearson, Third Edition, 2007

2. R. S. Gaonkar- "Microprocessor Architecture- Programming and Applications with 8085"- 5th Edition- Penram- 2009.

3. Tripti Dodiya & Zakiya Malek, "Computer Organization and Advanced Microprocessors", CengageLearning, 2012.

REFERENCE BOOKS:

1. Mathur- "Introduction to Microprocessor"- 3rd Edition- Tata McGraw-Hill-1993.

2. P. K. Ghosh and P. R. Sridhar- "0000 to 8085: Introduction to Microprocessors for Engineers andScientists"- 2nd Edition- PHI- 1995.

3. NagoorKani- "Microprocessor (8085) and its Applications"- 2nd Edition- RBA Publications- 2006.

4. V. Vijayendran- "Fundamentals of Microprocessors – 8085"- S. Viswanathan Pvt. Ltd.- 2008.

WEB REFERENCES:

NPTEL & MOOC courses titled Computer organization

https://nptel.ac.in/courses/106105163/

https://nptel.ac.in/courses/106103068

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I		Semester: II
Introduction to Computer Architecture and Microprocessor Practical		**125C21**
Credits 5	**Lecture Hours:5 per week**	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To introduce the internal organization of Intel 8085 Microprocessor.
- To enable the students to write assembly language programs using 8085.
- To interface the peripheral devices to 8085 using Interrupt controller and DMA interface.
- To provide real-life applications using microcontroller.

Course Outcomes: (for students: To know what they are going to learn)

CO1: Remember the Basic binary codes and their conversions. Binary concepts are used in Microprocessor programming and provide a good understanding of the architecture of 8085.

CO2: Understanding the 8085-instruction set and their classifications, enables the students to write the programs easily on their own using different logic.

CO3: Applying different types of instructions to convert binary codes and analysing the outcome. The instruction set is applied to develop programs on multibyte arithmetic operations.

CO4: Analyse how peripheral devices are connected to 8085 using Interrupts and DMA controller.

List of Programs

Addition and Subtraction

1. 8 - bit addition
2. 16 - bit addition
3. 8 - bit subtraction
4. BCD subtraction

Multiplication and Division

1. 8 - bit multiplication
2. BCD multiplication
3. 8 - bit division

Sorting and Searching

1. Searching for an element in an array.
2. Sorting in Ascending and Descending order.
3. Finding the largest and smallest elements in an array.
4. Reversing array elements.
5. Block move.

Code Conversion

1. BCD to Hex and Hex to BCD
2. Binary to ASCII and ASCII to binary
3. ASCII to BCD and BCD to ASCII

Applications

1. Square of a single byte Hex number
2. Square of a two-digit BCD number
3. Square root of a single byte Hex number
4. Square root of a two-digit BCD number

TEXT BOOKS:

1. M.M. Mano, "Computer System architecture". Pearson, Third Edition, 2007
2. R. S. Gaonkar- "Microprocessor Architecture- Programming and Applications with 8085"- 5th Edition- Penram- 2009.
3. Tripti Dodiya & Zakiya Malek, "Computer Organization and Advanced Microprocessors", CengageLearning, 2012.

REFERENCE BOOKS:

1. Mathur- "Introduction to Microprocessor"- 3rd Edition- Tata McGraw-Hill-1993.
2. P. K. Ghosh and P. R. Sridhar- "0000 to 8085: Introduction to Microprocessors for Engineers andScientists"- 2nd Edition- PHI- 1995.
3. NagoorKani- "Microprocessor (8085) and its Applications"- 2nd Edition- RBA Publications- 2006.
4. V. Vijayendran- "Fundamentals of Microprocessors – 8085"- S. Viswanathan Pvt. Ltd.- 2008.

WEB REFERENCES:

NPTEL & MOOC courses titled Computer organization

https://nptel.ac.in/courses/106105163/

https://nptel.ac.in/courses/106103068

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Title of the Course			**MATHEMATICS – II** (Common to B.Sc-Physics, Physics with CA, Chemistry, Computer Science, ECS, Data Science, Artificial Intelligence, Software Applications & BCA)				
Paper Number			**ELECTIVE COURSE II**				
Category	Elective	**Year**	I	**Credits**	3	**Course Code**	125E2A
		Semester	II				
Instructional Hours per week		**Lecture**		**Tutorial**	**Lab Practice**		**Total**
		4		1	--		5
Pre-requisite		12th Standard Mathematics					
Objectives of the Course		- Students gain some knowledge in Integral Calculus, Differential Equations. - They also learn the basic concepts in Laplace Transforms and Vector Calculus.					
		Unit I: Integral calculus: Bernouli's Formula, Reduction Formula $Sin^n\theta, Cos^n\theta, Sin^m\theta\, Cos^n\theta$ – Simple Problems. **Hours: 15**					
		Unit II : Fourier Series: Fourier series for functions $(0, 2\pi\,), (-\pi\,,\pi\,)$ **Chapter 4: Section : 4.1, 4.1.1** **Hours: 15**					
		Unit III: Differential Equations: Ordinary Differential Equations: second order non- homogeneous differential equations with constant coefficients of the form ay" +by'+ cy = X where X is of the form cos and sin - Related problems only. **Partial Differential Equations**: Formation, complete integrals and general integrals, fourstandard types and solving Lagrange's linear equation P p +Q q= R. **Chapter 5: Section 5.2.1, Chapter 6: Section 6.1 to 6.4 Hours: 15**					
		Unit IV: **Laplace Transforms:** Laplace transformations of standard functions and simple properties, inverseLaplace transforms. **Chapter 7: Section 7.1.1 to 7.1.4 & 7.2 to 7.2.3 Hours: 15**					
		Unit V: Vector Differentiation: Introduction, Scalar point functions, Vector point functions, vector differential operator Gradient, Divergence, Curl, Solenoidal, irrotational, identities. **Chapter 8, Section 8.1 to 8.4.4 Hours: 15**					

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)	**Total Hours: 75** Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
Recommended Text	Allied Mathematics, Volume II by P. Duraipandian and S.Udayabaskaran, S. Chand Publications
Reference Books	1. Ancillary Mathematics by S. Narayanan and T.K. ManickavachagomPillay, S. Viswanathan Pinters, 1986, Chennai 2. Allied Mathematics by A. Singaravelu 3. Allied Mathematics by P.R. Vittal
Website and **e-Learning Source**	1. http://www.themathpaage.com 2. http://nptel.ac.in

Course Learning Outcome (for Mapping with POs and PSOs)

Students will be able to

CLO 1: Understand the various concepts of Bernoulli's and Reduction Formula.

CLO 2: Understand the concepts of Fourier Series

CLO 3: Understand the concepts of Non-Homogenous and Partial Differential Equations

CLO 4: Understand the Laplace Transforms

CLO 5: Understand the concepts of Vector Differentiation.

	Pos						PSOs		
	1	2	3	4	5	6	1	2	3
CLO 1	1	3	2	3	1	1	3	1	1
CLO 2	2	3	1	3	1	1	3	1	1
CLO 3	3	2	1	3	1	1	3	1	1
CLO 4	2	3	1	3	1	1	3	1	1
CLO 5	3	3	2	3	1	1	3	1	1

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I   **Semester: II**

Elective: Statistics-II (Common to B.Sc.-CS, CS with AI, CS with DS, Software Appl. & BCA)	125E2B
Lecture Hours: 5 per week	**Credits:3**

| **Learning Objectives:** (for teachers: what they have to do in the class/lab/field) ||

Course Objectives:
1. Understand Probability and its properties
2. Learn characteristics of different discrete and continuous distributions.
3. Know situation to which different distributions can be applied.
4. Comprehend the Sampling distributions.
5. Learn how to apply statistical tests to get information from data

Units	Contents
I	Basic concepts of Probability: Random Experiments, Sample space, Trial, Events, - Classical and empirical approach to probability and their limitations –Types of events: Exhaustive, mutually exclusive, equally likely and Independent events - Axiomatic approach to probability - Basic theorems on probability using axiomatic approach. Bayes Theorem (statement only)
II	Discrete probability mass function, cumulative distribution function- Theory and problems based on it. Bernoulli distribution, Binomial Distribution and Poisson Distribution
III	Continuous probability density function, cumulative distribution function - Theory and problems based on it. Normal Distribution and its properties, Standard Normal distribution, Problems based on it. Exponential Distribution
IV	Introduction of Sampling distributions- student's t and chi-square distributions, distribution of sample mean from normal distribution. Density function and Properties only.
V	Testing of Hypothesis, Single mean test and double means test based on normal distribution and students t-distribution. Proportion test, Chi-square test, ANOVA test.

Course Outcomes: Upon finishing point of this course, students will be able to

1. understand the basic concept of Probability

2. identify the characteristics of different discrete and continuous distributions.

3. identify the type of statistical situation to which different distributions can be applied comprehend the Sampling distributions.

4. understand how to apply statistical tests to get information from data.

Suggested Readings:

Books for study:

1. Gupta,S.CandKapoor,V.K(2002),*FundamentalsofMathematicalStatistics*,SultanChandandSons,NewDelhi.

2. GoonA.M.,GuptaM.K.andDasguptaB.(2002):*FundamentalsofStatistics*,Vol.I&II,8thEdn.TheWorldPress,Kolkata.

3. IrwinMiller,MaryleesMiller(2006):*JohnE.Freund'sMathematicalStatisticswithApplications*,(7thEdn.),PrenticeHallInternationalINC.

4. Mood,A.M.Graybill,F.A.andBoes,D.C.(2007):*IntroductiontotheTheoryofStatistics*,3rdEdn.,(Reprint),TataMcGraw-HillPub.Co.Ltd

Books for reference:

1.SaxenaH.C.:*ElementaryStatistics*.S.Chand&Co.,2009.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Elective Course: Physics-II (Theory) Common for B.Sc.-SA, B.Sc.-CSc , B.Sc.-CSc-wAI	125E2C

Credits: 2	Lecture Hours: 3 per week

Learning Objectives:
- This paper introduces the student to the basic concepts of current electricity, electronics and digital electronics

Course Outcomes:
CO1: Acquire knowledge on elementary ideas of electricity and magnetism
CO2: Emphasize the significance of laws involved in electric circuits
CO3: Understand the basics of operational amplifier
CO4: Apply the principles of electronics in day to life
CO5: Apply the characteristics of electronic devices in practical.

Units	Contents
I	**Current Electricity** Ohm's law – Law of resistance in series and parallel – Specific resistance – capacitors – capacitors in serial and parallel – Kirchoff's laws – Wheatstone's network – condition for balance Carey-Foster's bridge – measurement of resistance – measurement of specific resistance – determination of temperature coefficient of resistance – Potentiometer – calibration of Voltmeter.
II	**Electromagnetism** Electromagnetic Induction – Faraday's laws – Lenz law – Self Inductance – Mutual Inductance – Experimental Determination-Coefficient of Coupling A.C. Circuits – Mean value – RMS value – Peak value – LCR in series circuit – impedance – resonant frequency – sharpness of resonance.
III	**Atomic and Nuclear Physics** Bohr's atom model – radius energy – Atomic excitation – Ionization potential – Frank and Hertz Method – Nucleus – Nuclear properties – Mass defect – Binding energy. Radio isotopes – Uses of radio isotopes – Nuclear fusion and Nuclear fission – X-rays – Production – properties –Derivation of Bragg's law – uses of X-raysin industrial and medical fields.
IV	**Analog Electronics** Semiconductor – PN junction diode – Bridge rectifier – Zener diode – Regulated power supply. Transistor – Working of a transistor – Transistor characteristics: CE Configuration – current gain relationship between $\square$ and $\square$ – Transistor Characteristics – CE Configuration only – CE amplifier – feedback – Hartley oscillator – Colpitt's oscillator

V	**Digital Electronics**
	Number system – Decimal – Binary – Octal and Hexadecimal system – Double Dabble method – Binary addition, subtraction and multiplication– conversion of binary number to octal and hexadecimal numbers and vice versa.
	Logic gates – OR, AND, NOT, XOR, NAND and NOR gates – truth tables – Half adder and Full adder circuits – Laws and theorems of Boolean's algebra – De Morgan's theorems.

Learning Resources:
Recommended Texts
1. Electricity and Magnetism – R. Murugesan, S. Chand & co, 2001.
2. Modern Physics – R. Murugesan, S. Chand & co, 1998.
3. Basic Electronics – B.L. Theraja, S. Chand & co, 2003.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Elective Physics-I & II (Practicals) (Semester I & II) Common for B.Sc.-SA, B.Sc.-CSc , B.Sc.-CSc-wAI	**125E21**
Credits 2	**Lecture Hours: 2 + 2 = 4**

Learning Objectives:

* The students can acquire practical knowledge on the given experiments.

ELECTIVE PHYSICS-I & II – (PRACTICALS)
(Examination will be held at the end of even Semester - Any Fifteen Experiments)

1. Young's Modulus by Non-uniform bending using Pin and Microscope
2. Young's Modulus by Non-uniform bending using Optic lever–Scale and telescope
3. Rigidity modulus by Static torsion method.
4. Rigidity modulus by Torsional oscillations without mass
5. Surface tension and Interfacial Surface tension–Drop Weight method
6. Comparison of Viscosities of two liquids–Burette method
7. Specific heat Capacity of a liquid–Half time correction
8. Sonometer–Determination of a.c frequency
9. Newton's Rings-Radius of curvature
10. Air wedge–Thickness of aware.
11. Spectrometer–Grating–Wavelength of Mercury lines–Minimum deviation method
12. Potentiometer–Voltmeter Calibration
13. P.O. Box–Specific resistance
14. B.G.–Figure of Merit (table galvanometer)
15. Construction of AND, OR, NOT gates–using diodes and Transistor
16. Zener Diode–Characteristics
17. NAND gate as a universal gate

Note: Use of Digital Balance Permitted.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I   **Semester: II**

Quantitative Aptitude	125S2A
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 2	**Lecture Hours: 2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
To improve the quantitative skills of the students
To prepare the students for various competitive exams

Course Outcomes: (for students: To know what they are going to learn)
CO1: To gain knowledge on LCM and HCF and its related problems
CO2: To get an idea of age, profit and loss related problem solving.
CO3: Able to understand time series simple and compound interests
CO4: Understanding the problem related to probability, and series
CO5: Able to understand graphs, charts

Units	Contents
I	Numbers - HCF and LCM of numbers - Decimal fractions - Simplification - Square roots and cube roots - Average - problems on Numbers
II	Problems on Ages - Surds and Indices - percentage - profits and loss - ratio and proportion - partnership - Chain rule.
III	Time and work - pipes and cisterns - Time and Distance - problems on trains - Boats and streams - simple interest - compound interest - Logarithms - Area - Volume and surface area - races and Games of skill.
IV	Permutation and combination - probability - True Discount - Bankers Discount - Height and Distances - Odd man out & Series.
V	Calendar - Clocks - stocks and shares - Data representation - Tabulation - Bar Graphs - Pie charts - Line graphs

Learning Resources:
Recommended Texts
1. "Quantitative Aptitude", R.S. AGGARWAL., S. Chand & Company Ltd.,
Web resources: Authentic Web resources related to Competitive examinations

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: I   **Semester: II**

Problem Solving Techniques	125S2B
Credits 2	**Lecture Hours:2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand the importance of algorithms and programs, and to know of the basic problem-solving strategies.
- To learn efficient strategies and algorithms to solve standard problems, thus laying a firm foundation for designing algorithmic solutions to problems.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Understand the systematic approach to problem solving.
CO2: Know the approach and algorithms to solve specific fundamental problems.
CO3: Understand the efficient approach to solve specific factoring-related problems.
CO4: Understand the efficient array-related techniques to solve specific problems.
CO5: Understand the efficient methods to solve specific problems related to text processing. Understand how recursion works.

Units	Contents
I	Introduction: Notion of algorithms and programs – Requirements for solving problems by computer – The problem-solving aspect: Problem definition phase, Getting started on a problem, The use of specific examples, Similarities among problems, Working backwards from the solution – General problem-solving strategies - Problem solving using top-down design – Implementation of algorithms – The concept of Recursion.
II	Fundamental Algorithms: Exchanging the values of two variables – Counting - Summation of a set of numbers - Factorial computation - Sine function computation - Fibonacci Series generation - Reversing the digits of an integer – Base Conversion.
III	Factoring Methods: Finding the square root of a number – The smallest divisor of an integer – Greatest common divisor of two integers - Generating prime numbers – Computing the prime factors of an integer – Generation of pseudo-random numbers - Raising a number to a large power – Computing the nth Fibonacci number.
IV	Array Techniques: Array order reversal – Array counting or histograming – Finding the maximum number in a set - Removal of duplicates from an ordered array - Partitioning an array – Finding the kth smallest element – Longest monotone subsequence.
V	Text Processing and Pattern Searching: Text line length adjustment – Left and right justification of text – Keyword searching in text – Text line editing – Linear pattern search.Recursive algorithms: Towers of Hanoi – Permutation generation.

Learning Resources:

Recommended Texts

1. R. G. Dromey, *How to Solve it by Computer*, Pearson India, 2007.

Reference Books

1. George Polya, Jeremy Kilpatrick, *The Stanford Mathematics Problem Book: With Hints and Solutions*, Dover Publications, 2009 (Kindle Edition 2013).

2. Greg W. Scragg, *Problem Solving with Computers*, Jones & Bartlett 1st edition, 1996.

Web resources

செto்னைப் பல்கலைக்கழகம்
University of Madras

Part-IV

வளர்நிலைத் தமிழ் - பாடத்திட்டம்

Advanced Tamil - Syllabus

2 பருவங்கள் (இரண்டாம் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

வளர்நிலைத் தமிழ் - II (Advanced Tamil - II)

Course Code	Course Name	Category	L	T	P	S	Credit	Ins. Hours	Marks		
									CIA	External	Total
100S2B	வளர்நிலைத் தமிழ் - II Advanced Tamil - II	Supportive	2	-	-	-	2	2	25	75	100
Pre - requisite	பத்தாம் வகுப்புவரை தமிழை மொழிப்பாடமாகப் படித்திருக்க வேண்டும்.									SV 2023	

Learning Objectives - கற்றல் நோக்கங்கள்

* பண்டைத் தமிழ் இலக்கியங்கள் , அவற்றின் சிறப்புகள் மற்றும் பொருண்மைகள் ஆகியன குறித்து அறியச்செய்தல்.
* காப்பிய இலக்கியங்கள் , பக்தி இலக்கியங்கள் ஆகியவற்றில் காணலாகும் கருத்துக் கருவூலங்களை நுகரச் செய்தல்.
* உரைநடை இலக்கியத்துள் , கட்டுரை, இலக்கியம் குறித்த அறிமுகத்தை மாணவர்களுக்கு ஏற்படுத்துதல்.
* பாடத்தின்வழி, பல்வகை இலக்கியங்கள் தோன்றுவதற்கான காரணங்கள் மற்றும் மாற்றம் பெறுவதற்கான காரணங்களை அறியச் செய்தல்.
* இருவேறு மொழிகளின் இயல்புகளை உணர் த்தி, மொழிபெயர்க்கும் திறனையும் அலுவலகக் கடிதம் எழுதும் பயிற்சியையும் பெறச் செய்தல்.

Expected Course Outcomes - எதிர்பார்க்கப்படும் கற்றல் அடைவுகள்

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

இப் பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்.

CO 1	உரைநடை இலக்கியத்தின் பெருமைகளை உணர்ந்து , அதனை அன்றாட வாழ்வில் பயன்படுத்தும் திறன் பெறுவர்.	K2,K3
CO 2	பண்டைத் தமிழ் இலக்கியங்கள் காட்டும் சமூக , பண்பாட்டு, வாழ்வியல் முறைகளை அறிந்துகொள்வர்.	K1,K3,K4
CO 3	காப்பியக் கட்டமைப்புகளை இன்றைய புதினம் , திரைப்படங்கள் ஆகியவற்றுடன் ஒப்பிட்டுக் காணும் அறிவைப் பெறுவர்.	K1,K3,K4
CO 4	தமிழ் இலக்கிய மரபினையும் மாற்றங்களையும் ஆய்ந்து உணரும் ஆற்றல் பெறுவர்.	K1,K4,K5, K6
CO 5	மொழிபெயர்ப்புத் திறன் பெறுவதோடு, அன்றாட வாழ்வின் தேவைகளான பல்வகை அலுவலகக் கடிதங்கள் எழுதும் திறன் பெறுவர்.	K4,K5,K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

Unit - I	பக்தி இலக்கியமும் சிற்றிலக்கியமும்
	1. "மண்ணில் நல்லவண்ணம் வாழலாம்" - திருஞான சம்பந்தர் 2. திருவேங்கடமலையில் பிறத்தல் என்னும் தலைப்பில் குலசேகர ஆழ்வார் பாடியுள்ள பாடல்களில் ஏதேனும் ஒன்று. 3. முக்கூடற்பள்ளு இலக்கியத்தில் மூத்த பள்ளி தன் நாட்டுவளம் குறித்துப் பாடியுள்ள பாடல்களில் ஏதேனும் ஒன்று.
Unit - II	சங்க இலக்கியம், அற இலக்கியம், காப்பியம்
	1. "நாடா கொன்றோ காடா கொன்றோ" - ஒளவையார். 2. "யாதும் ஊரே" - கணியன் பூங்குன்றனார் - புறநானூறு 3. "நிலத்தினும் பெரிதே", "வேம்பின் பைங்காய்" - குறுந்தொகை. 4. திருக்குறள் — 'பொருள்செயல் வகை' அதிகாரம்

	உ) சிலப்பதிகாரம் - வஞ்சிக் காண்டம் - காட்சிக் காதை.
	ஊ) குண்டலகேசி - "பாளையாம் தன்மை செத்தும்" எனத் தொடங்கும் பாடல்.
Unit - III	**தமிழ் உரைநடை**
	தமிழ் உரைநடைச் சிறப்பையும் தேவையையும் மாணவர்கள் உணரும் வகையில் ஒரு சிறுகதை, ஓர் ஒரங்க நாடகம், ஓர் எளிய கட்டுரைத் தொகுப்பு இவற்றை அறிமுகம் செய்க.
Unit - IV	**தமிழர் பண்பாட்டு வரலாறு**
	தமிழர் பண்பாடு, கலைகள் (நிகழ்த்து கலை, ஓவியம், கட்டடக் கலை போன்றவற்றை அறிமுகம் செய்க.
Unit - V	**மொழிப் பயிற்சி**
	1. மயங்கொலிப் பிழை, குறில்-நெடில், சொற்பிழை, சந்திப்பிழை, தொடர்ப் பிழைகளை நீக்கி எழுதப் பயிற்சியளித்தல். 2. கலைச்சொல்லாக்கம் 3. மொழிபெயர்ப்பு - தமிழ்-ஆங்கிலம், ஆங்கிலம்-தமிழ் பகுதிகளை மொழிபெயர்ப்பு செய்யப் பயிற்சியளித்தல். 4. வேலைவேண்டி விண்ணப்பம் எழுதுதல். 5. அலுவலகக் கடிதம். 6. போட்டித் தேர்வுகளுக்குரிய கண்ணோட்டத்தில் மொழி, இலக்கிய வரலாற்றினைக் கற்பித்தல்.

Text book (s)

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Reference Books / Websites

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	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
CLO 1	3	2	3	2	2	3	2	2	2	2	3	3
CLO 2	2	2	2	3	3	2	2	3	3	2	2	2
CLO 3	3	3	3	2	2	3	3	2	3	3	3	3
CLO 4	3	2	3	3	3	3	2	2	2	2	3	2
CLO 5	2	2	3	3	2	2	3	3	2	3	3	2
Strong - 3, Medium - 2, Low - 1												

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Part-IV

அடிப்படைத் தமிழ் - பாடத்திட்டம்

Basic Tamil - Syllabus

2 பருவங்கள் (இரண்டாம் பருவம்)

(B.A., B.Sc., B.Com., BCA, BBA)

2023-24

அடிப்படைத் தமிழ் - II (Basic Tamil - II)

Course Code	Course Name	Category	L	T	P	S	Credit	Ins. Hours	CIA	External	Total
									Marks		
100S2A	அடிப்படைத் தமிழ் - II Basic Tamil - II	Supportive	2	-	-	2	2	25	75	100
Pre - requisite	தமிழ் எழுத்துகளை அறிந்திருத்தலோடு தொடக்க நிலையில் பேசவும் எழுதப் படிக்கவும் தெரிந்திருத்தல்.										SV 2023

Learning Objectives - கற்றல் நோக்கங்கள்

- தமிழ்மொழியைத் தொடக்க நிலையில் பேசவும் பிறர் பேசுவதைப் புரிந்துகொள்ளவும் திறன் பெறுதல். தமிழைப் படிக்கவும் எழுதவும் கற்றுக்கொள்ளுதல்.

- பிறமொழி மாணவர்களுக்குத் தமிழ்மொழி யின் சிறப்புகள், கலை-பண்பாட்டை அறிமுகப்படுத்துதல்.

- தமிழ் இலக்கிய இலக்கண வளங்களின் சிறப்புக ளை அறிதல். அவற்றுள் சிலவற்றைச் சுவைத்துப் பார்த்தல்.

- தமிழரின் தனித்தன்மைகளை உணரச் செய்தல்.

Expected Course Outcomes - எதிர்பார்க்கப்படும் கற்றல் அடைவுகள்

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

இப் பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	தமிழ்மொழியைப் பேசவும் பிறர் பேசுவதைப் புரிந்துகொள்ளவும் திறன் பெறுதல். தமிழைப் படிக்கவும் எழுதவும் கற்றுக்கொள்வர்.	K1,K2
CO 2	கடிதம், விண்ணப்பம், நிகழ்ச்சிக் குறிப்புகள் எழுதுதல், தகவல் தொடர்புச் சாதனங்களில் தகவல் எழுதுதல் என அன்றாட வாழ்வில் தமிழ்ப் பயன்பாட்டைக் கற்றுக்கொள்வர்.	K1,K3,K4
CO 3	தமிழின் இலக்கிய வளத்தோடு தமிழரின் அறக் கோட்பாடுகளை யும் தமிழரின் வரலாற்று-பண்பாட்டுச் செழுமையையும் புரிந்துகொள்வர்.	K1,K2,K4
CO 4	தமிழறிஞர்களையும் படைப்பாளிக ள், அரசியல் தலைவர்கள், சிறந்த ஆளுமைகளைப் பற்றி அறிந்துகொள்வர்.	K4,K5,K6
CO 5	தமிழர் கலை, பண்பாடு, பழக்கவழங்கங்கள், விளையாட்டுகள், விழாக்கள், தமிழரின் தனித்த அடையாளங்கள், சிறப்புகள் ஆகியவற்றை அறிவதோடு, அவரவர் மண்ணுகுரிய கலைப் பண்பாட்டோடு ஒப்பிட்டுப் புரிந்துகொள்வர்.	K1,K4,K5, K6

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

Unit - I	சொல்லும் பொருளும்
	1. பெயர்-வேற்றுமை, வினை-காலம், பெயரடை-வினையடை, எதிர்ச்சொற்கள் போன்றவரைக் கொண்டு சிறுசிறு தொடர்கள் பேசவைத்தல், எழுதவைத்தல்.
	2. பெயர்ப் பலகை, செய்தித்தாள் போன்றவற்றை வாசிக்கவும் பொருள் கூறவும் பயிற்சியளித்தல்.
	3. உரையாடல் (படங்களைப் பார்த்து, சொற்களைச் சொல்லவைத்தல்/பேசவைத்தல், கேள்விகளுக்குப் பதில் அளித்தல், தலைப்புகள் கொடுத்துப் பேசச் செய்தல்.

Unit - II	அன்றாட வாழ்வில் தமிழ்ப் பயன்பாடு
	காலைக் கடமைகள், சமையல், உணவுகள், உடல்நலம், வீட்டுப் பொருள்கள், வணிகம், போக்குவரத்து, பயணம் தொடர்பான செயல்பாடுகள் போன்ற அன்றாட நடவடிக்கைகளில் தமிழ்மொழிப் பயன்பாடு.
Unit - III	தமிழ் இலக்கியங்கள் அறிமுகம்
	1. தமிழ் இலக்கியங்கள் அறிமுகம் - இலக்கிய இலக்கண வளங்களின் சிறப்புகள்.
	2. திருக்குறள், ஆத்திசூடி, சங்க இலக்கியம், திரைப் பாடல்கள், நாட்டுப்புறப் பாடல்கள் போன்றவற்றில் சுவைமிகுந்த பாடல்களை வாசிக்கவைத்தல் பொருளுணர்த்துதல், கற்றவற்றை எழுதச்செய்தல்.
Unit - IV	தமிழ்ப் படைப்பாளர்கள், அறிஞர்கள், ஆளுமைகள், தலைவர்கள்
	1. இலக்கிய-இலக்கணப் படைப்பாளர்கள் (தொல்காப்பியர், திருவள்ளுவர், ஔவையார், கம்பர், பாரதி, பாரதிதாசன், ஜெயகாந்தன், கண்ணதாசன், வைரமுத்து போன்றோர்).
	2. அரசியல் தலைவர்கள் (காமராசர், பெரியார், அண்ணா, எம்.ஜி.ஆர். போன்றோர்).
	3. திரைப் பிரபலங்கள் (சிவாஜி கணேசன், ரஜினிகாந்த், கமலஹாசன், பாலச்சந்தர், இளையராஜா, சி.பா. பாலசுப்பிரமணியம் போன்றோர்).
	4. ஆளுமைகள் (வ.உ. சிதம்பரனார், பாவாணர், அப்துல் கலாம், போன்றோர்). மேற்குறித்தோரை அறிமுகப்படுத்துதல். மாணவர்களைப் பேசவைத்தல் /எழுதவைத்தல்.
Unit - V	தமிழர் கலை, பண்பாடு, பழக்க வழங்கங்கள், விளையாட்டுகள், விழாக்கள்
	1. தமிழரின் தனித்த அடையாளங்களும் சிறப்புகளும்.
	2. கலைகள் (கட்டடம், சிற்பம், ஓவியம், புழங்குபொருள்கள்).
	3. நுண்கலைகள் (சிலம்பம், பட்டிமன்றம், வில்லுப்பாட்டு, ஆட்டம், கூத்து போன்றன).
	4. விளையாட்டுகள் (குழந்தைகள், சிறுவர், இளைஞர், ஆண்கள், பெண்கள்).
	5. விழாக்கள் (குடும்ப விழாக்கள், கோயில் சார்ந்த விழாக்கள், கிராமிய விழாக்கள்).
	6. சுற்றுலாத் தலங்கள் / வரலாற்றுச் சிறப்புமிக்க இடங்கள்.
	7. உணவு, உடை, மருத்துவம் இன்னபிற. மேற்குறித்தவற்றை அறிமுகப்படுத்துதல். மாணவர்களைப் பேசவைத்தல் /எழுதவைத்தல்.
Text book (s)	
●	அடிப்படைத் தமிழ்-2 (Basic Tamil-II)
Reference Books / Websites	
●	தமிழில் நாமும் தவறில்லாமல் எழுதலாம் - பொற்கோ, பாரி நிலையம், சென்னை, 2003.
●	www.tamilvu.org/ta/content/சான்றிதழ்
●	www.thamizham.net/kal/ttenglish/cards32-u8.htm
●	www.thamizham.net/kal/ttenglish/index-u8.htm
●	www.ilearntamil.com
●	www.wikihow.com/Learn-Tamil
●	www.ilovelanguages.org/tamil.php
●	www.ling-app.com/learn-tamil
●	www.ilearntamilnow.com
●	www.17-minute-languages.com/en/learn-tamil
●	www.hindustanitongue.com/learn-tamil

•	www.duolingo.com/course/ta/en/Learn-Tamil	
•	www.mylanguages.org/learn_tamil.php	
•	www.learn101.org/tamil.php	
•	www.goethe-verlag.com/book2/EN/ENTA/ENTA002.HTM	
•	www.karky.in/payilcourses/index.html	
•	www.tamilvu.org/ta/பயணியர்-தமிழ்	
•	www.languagetrainers.com/blog/tamil-words/	
•	www.thamizham.net/kal/tamil.htm	
•	www.worldtamilacademy.com	
•	www.outsourcingtranslation.com/resources/phrases/tamil-sentences.php	
•	www.ling-app.com/ta/basic-words-in-tamil/	
•	www.thirutamil.com/article/20-easy-thirukkural-in-tamil/	
•	www.chennailibrary.com/avvai/kondraivendan.html	
•	www.tamilvu.org/ta/content/புதிய-பாடத்திட்டம்-2022	
•	www.tamilvu.org/ta/content/மின்-கற்றலுக்கான-இணையத்தளம்	
•	www.ling-app.com/ta/tamil-culture	
•	www.caleidoscope.in/art-culture/tamil-nadu-culture-3	
Apps		
•	www.kaniyantamil.com/best-mobile-apps-tamil-learning/	
•	Tamil 101 - Learn to Write	
•	https://payil.app/tva/ta/	
•	https://tamil-101.en.aptoide.com/app	
•	Ling - Learn Tamil Language	
•	Tamil by Nemo	
•	Learn Tamil Quickly	

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
CLO 1	3	2	3	2	2	3	2	2	2	2	3	3
CLO 2	2	2	2	3	3	2	2	3	3	2	2	2
CLO 3	3	3	3	2	2	3	3	2	3	3	3	3
CLO 4	3	2	3	3	3	3	2	2	2	2	3	2
CLO 5	2	2	3	3	2	2	3	3	2	3	3	2
Strong - 3, Medium - 2, Low - 1												

செ ன்னைப் பல்கலைக்கழகம்
University of Madras

Part-I

பொதுத் தமிழ் - பாடத்திட்டம்

General Tamil - Syllabus

4 பருவங்கள் (மூன்றாம் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

பொதுத்தமிழ் -3
தமிழக வரலாறும் பண்பாடும்
இரண்டாம் ஆண்டு – மூன்றாம் பருவம்

Course Code	Course Name	category	L	T	P	S	Credits	Ins.Hrs	CIA	Externa	Total
200L3AU	பொதுத்தமிழ் -3 தமிழக வரலாறும் பண்பாடும்	Supportive	Y	-	-	-	3	6	25	75	100

Learning Objectives

- தமிழக வரலாற்றை அறிந்துகொள்ளுதல்.
- தமிழரின் வாழ்வியல் தொன்மையை அறிதல்.
- தமிழரின் பண்பாட்டினை அறிந்துகொள்ளல்.
- தமிழர்மேல் நிகழ்ந்த பிற பண்பாட்டுத் தாக்கங்களை அறிதல்.
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்

Expected Course Outcomes

On the Sucessful completion of the Course, Students will be able to

இப்பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	தமிழக வரலாற்றை அறிந்துகொள்வர்.	K4
CO 2	தமிழரின் வாழ்வியல் தொன்மையை அறிவர்.	K5, K6
CO 3	தமிழரின் பண்பாட்டுக் கூறுகளை அறிந்துகொள்வர்	K3
CO 4	பிற பண்பாட்டுத் தாக்கம் மற்றும் அணுகுமுறைகளை அறிவர்.	K3
CO 5	மொழிப்பயிற்சிக்குத் தேவையான இலக்கணங்களைக் கற்பர்.	K2

K1 - Remember; K2 - Undestand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

அலகு-1	தொல் பழங்கால வரலாறும் சங்ககால வரலாறும்

1. தொல் தமிழர்
2. பழைய கற்காலம்
3. புதிய கற்காலம்
4. உலோகக் காலம்
5. அகழ்வாராய்ச்சியில் தமிழும் தமிழரும் (கீழடி வரை)
6. திணை வாழ்வியல் (களவு வாழ்க்கை, கற்பு வாழ்க்கை, உணவு, அணிகலன்கள், வாணிகம்,விளையாட்டுகள்)
7. கல்வியும், கலைகளும்

8. தமிழ் வளர்த்த சங்கம்
9. சங்க கால ஆட்சி முறை
10 . அயல்நாட்டுத் தொடர்புகள்

அலகு-2	ஆட்சியர் வரலாறு

1. மூவேந்தர் வரலாறு
2. பல்லவர் வரலாறு
3. நாய்க்கர் ஆட்சி
4. முகம்மதியர் ஆட்சி
5. மராட்டியர் ஆட்சி

அலகு-3	ஐரோப்பியர் கால வரலாறு

1. போர்த்துக்கீசியர்
2. டச்சுக்காரர்கள்
3. டேனிஸ்காரர்கள்
4. பிரெஞ்சுக்காரர்கள்
5. ஆங்கிலேயர்கள்
6. பாளையக்காரர்கள்
7. இந்திய விடுதலைப் போராட்டத்தில் தமிழ்நாடு

அலகு-4	விடுதலைக்குபின் தமிழ்நாட்டு வரலாறு

1. மொழிப்போராட்டம்
2. சமூக மறுமலர்ச்சி
3. தொழில்நுட்ப வளர்ச்சி

அலகு-5	மொழிப்பயிற்சி

• நிறுத்தக் குறிகள்
• கலைச்சொற்கள்
• மொழிபெயர்ப்பு
பயிற்சி :ஆங்கிலக் கலைச் சொற்களைக் கொடுத்து அவற்றைத் தமிழில் மொழிபெயர்க்கச் செய்தல்.

Text books
• தமிழக வரலாறும் பண்பாடும் - கே.கே. பிள்ளை, உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை,
• தமிழர் நாகரிகமும் பண்பாடும் - அ. தட்சிணாமூர்த்தி, யாழ் வெளியீடு, சென்னை,.
• தமிழக வரலாறும் பண்பாடும் - வே.தி. செல்லம், மணிவாசகர் பதிப்பகம், சென்னை,
• ஆதிச்சநல்லூர் முதல் கீழடி வரை நுவேதா லூயிஸ், கிழக்குப் பதிப்பகம், சென்னை.
• பண்பாட்டு மானிடவியல் - பக்தவத்சல பாரதி, அடையாளம் பதிப்பகம், திருச்சி.
• .தமிழர் மேல் நிகழ்ந்த பண்பாட்டுப் படையெடுப்புகள், க.ப. அறவாணன், தமிழ்க்கோட்டம், சென்னை.
•

Reference Books

- *தமிழக சமுதாய பண்பாட்டு கலை வரலாறு -கு. சேதுராமன், என்.சி.பி.எச், சென்னை,*
- *தமிழர் கலையும் பண்பாடும் -அ.கா. பெருமாள், என்.சி.பி.எச், சென்னை.*
- *ஒரு பண்பாட்டின் பயணம்: சிந்து முதல் வைகை வரை -ஆர். பாலகிருஷ்ணன், ரோஜா முத்தைய்யா ஆராய்ச்சி நூலகம், சென்னை.*
- *தமிழும் பிற பண்பாடும் - தெ.பொ. மீனாட்சி சுந்தரனார், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை*
- *தமிழர் வரலாறும் பண்பாடும் - நீலகண்ட சாஸ்திரி, ஸ்ரீசெண்பகா பதிப்பகம், சென்னை*
- *தமிழர் வரலாறும் தமிழர் பண்பாடும்- மா.இராசமாணிக்கனார்*
- *தமிழர் நாகரிக வரலாறு -க.த.திருநாவுக்கரசு, தொல்காப்பியர் நூலகம், சென்னை.*

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

Web Sources

- https://www.chennailibrary.com/
- https://www.sirukathaigal.com
- https://www.tamilvirtualuniversity.org
- https://www.noolulagam.com
- https://www.katuraitamilblogspot.com

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
CLO 1	3	2	3	2	2	3	2	2	2	2	3	3
CLO 2	2	2	2	3	3	2	2	3	3	2	2	2
CLO 3	3	3	3	2	2	3	3	2	3	3	3	3
CLO 4	3	2	3	3	3	3	2	2	2	2	3	2
CLO 5	2	2	3	3	2	2	3	3	2	3	3	2

Strong -3, Medium-2, Low-1

UNIVERSITY OF MADRAS

UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE

EXISTING SYLLABUS (22-23) FOLLOWED FOR THE ACADEMIC YEAR 2023-2024

200L3E

FOUNDATION COURSE: PART-I HINDI PAPER-III

Inst.Hrs. : 6   **Year   : II**
Credits   : 3   **Semester : III**

PAPER –III ANCIENT POETRY AND INTRODUCTION TO HINDI LITERATURE (UPTO REETI KAAL)	
Duration:	**1 Semester**
Programme Outcomes:	1. Identify the ancient poets and their works, contribution to society and Literature 2. Studies the contemporary conditions and its impact on Ancient poets 3. Understand the message of poets their expressional and artistic skills 4. Evaluation and critical study of Ancient Poetry and Trends of Ancient Literature 5. Obtain the skills of summerise, interpretation of contexts and literary attitude
Programme Specific Outcomes:	1. Basic knowledge of Ancient Poets and their works 2. Basic Knowledge of History of Hindi literature and its trends 3. Obtain skills of briefing, interpretation and evaluation 4. Basic idea of critical and analytical study of literature. 5. Obtain the application knowledge of relation between contemporary condition and literature and its impact on poets

Course Objectives	1. Identify the literary trends of ancient Hindi literature, and social conditions and its impact on Ancient poetry	K1
	2. Summarise the content of prescribed poems and understand the trends of Ancient Hindi Literature .	K2
	3. Critical study and analysis of artistic skills of poets and their expressional skills and literary trends	K4
	4. Employ the methods of interpreting contexts, ideas and identify the special features, poetic skills through practicing annotation writing	K3
	5. Differentiate the subject, ideology, contribution and poetic skills with each other and also know about contemporary poets , writers and the impact of contemporary situations	K5
	6. Conceive the aims of Literature and relations between Literature and contemporary society	K6

Pre-requisites, if any:	Basic Knowledge of Hindi Fiction and Translation

	UNITS
I	1. Kabirdas - Saakhi (Dohas from 1 to 10) 2. Literary Trends of Veeragatha Kaal (Aadikaal) 3. Chand Baradai and his Works 4. Vidhyapathi and his Works
II	1. Surdas - Bramargeet Saar 2. Literary Trends of Bhakthi Kaal 3. Gyan Margi Shakha 4. Important Poet : 1. Kabirdas
III	1. Tulasidas – Vinay ke Pad only 2. Literary Trends of Bhakthi Kaal – Prem Margi Shakha 3. Literary Trends of Bhakthi Kaal - Ram Bhakthi Shakha 4. Important Poets – 1. Joyasi and 2. Tulasidas
IV	1. Meera Bai – Pad only 2. Tiruvalluar (Dharmakaand only) 3. Literary Trends of Bhakthi Kaal – Krishna Bhakthi Shakha 4. Important Poet – Surdas
V	1. Biharilal (Dohas 1 to 5) 2. Literary Trends of Reethikaal 3. Important Poet : Bihari and his works 4. Bhushan and his works and Ghananand and his works

Course Outcomes	1. Identifies the Ancient Poets their works, and impact of contemporary conditions of society and ancient History of Hindi Literature 2. Understand the theme , message, expressional and artistic skills 3. Evaluate the thought, ideology, expressional and artistic skills of writers and contextual meanings and literary trends of Ancient History 4. Obtain skills of summarizing, evaluating and critical study and of poems 5. Employ the techniques of interpretation and contextual meaning of texts

Reading List (Print and Online)	1. Hindi Sahithya Ka Itihas,
	  By: Ramchandra Shukla, Jaya Bharati Publications, 217, B, Maya Press Road, Allahabad – 211 003.
	2. Hindi Sahithya Yug Aur Pravrithiya
	  By: Dr. Sivakumar Varma,
	    Asok Prakashan Nayi Sarak, New Delhi – 6.
	3. Hindi Sahithya ka Itihas

	By : Gulabroy, Lakshmi Narayana Agarwal Book Publishers and seller, Anupama Plaza – 1, Block No. 50, Sanjay Palace, Agra – 282002.	

Recommended Texts	1. **Poetry Selection**
	   Madras University Publications
	   University of Madras	

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	M	M	M
CO 2	S	S	S	S	S
CO 3	S	S	S	S	S
CO 4	M	S	S	S	S
CO 5	M	S	S	S	S

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

Programme:	**I & II UG – Second Language - SANSKRIT**
Programme Code:	**BFC-LS22**
Duration:	**2 years**
Programme Outcomes:	After successful completion of the course, learners will be able to: 1. Create simple sentences using different grammatical tenses 2. Sensitize the students to the functioning of the language 3. Know the historical and cultural perspective of literary trends and movements in Sanskrit and in its literature 4. Define the origin of Sanskrit Literature 5. Demonstrate different teaching methodologies 6. Translate simple passages 7. Consolidate their communication skills in both spoken and written Sanskrit.
Programme Specific Outcomes:	1. Understand and appreciate the aesthetical, social, political, cultural, etc., values expressed in various prescribed texts 2. Apply different grammatical rules to their reading and writing assignments 3. Identify the base words of nouns and different tenses 4. Read, understand, write and speak in simple Sanskrit 5. Translate simple sentences related to the themes given

List of Courses:

Semester	Course Code	Title of the Course	Core/Elective/ Soft Skill	Credits
I	BFC-LS001	Paper I – Poetry, Grammar and History of Sanskrit Literature	C	3
II	BFC-LS002	Paper II – Prose, Grammar and History of Sanskrit Literature	C	3
III	BFC-LS003	Paper III – Drama, Grammar and History of Sanskrit Literature	C	3
IV	BFC-LS004	Paper IV – Alankara, Didactic & Modern literatures and Translation	C	3

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

100L1G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-I

Inst.Hrs. : 6   **Year   : I**
Credits   : 3   **Semester : I**

Paper I – Poetry, Grammar and History of Sanskrit Literature

Course Outcomes	1. Remember the usage of grammatical tenses in constructing sentences in dialogue. 2. Apply the rules of usage in practice exercises and identify errors 3. Explain the nuances in the usage of various grammatical tenses and aspects 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in French 5. Communicate in French and summarize the given text	
Course Objectives	Understand the basic Sanskrit sentence structure	K1
	To provide the glimpses of the rich Sanskrit literary tradition through reading the literary composition	K2
	Explain the language of this Mahakavya which is highly elaborate and polished with continual play upon words and variety of metres	K3
	Analyse and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate grammatical nature of verses	K5
Units		
I	Introduction to Sanskrit (Alphabets, Two letter words and three letter words) Grammar: *akārāntaḥ puṁliṅgaḥ śabda-s* - 1. बाल (*Bāla*) and 2. देव (*Deva*) *ākārāntaḥ strīliṅgaḥ śabda-s* - 1. बाला (*Bālā*) and 2. लता (*Latā*) *akārāntaḥ napuṁsakaliṅgaḥ śabda-s* - 1. फल (*Phala*) and 2. वन (*Vana*)	
II	Introduction to *Rāmāyana, Kālidāsa* and his poetic works Text: *Raghuvaṁśa* (Canto I) Verses 1-15	
III	Introduction to the works of *Bhāravi* - Text: *Raghuvaṁśa* (canto I) Verses 16-30	
IV	Introduction to the works of *Śrī Harṣha* - Text: *Raghuvaṁśa* (Canto I) Verses 31-45	
V	Grammar: Conjugations - *Laṭ lakāra-s* – (Present tense) (i) गच्छति (*Gacchati*) (ii) तिष्ठति (*Tiṣṭhati*) (iii) पठति	

2

	(*Paṭhati*) (iv) नृत्यति (*Nṛtyati*) (v) कुप्यति (*Kupyati*) (vi) कथयति (*Kathayati*) (vii) गणयति (*Gaṇayati*) (viii) अस्ति (*Asti*) (ix) करोति (*Karoti*) (x) शृणोति (*Śṛṇoti*) Indeclinables (Avyayaani) - अपि (*api*), कदा (*kadā*), च (*ca*), अद्य (*adya*), विना (*vinā*), सह (*saha*), तत्र (*tatra*), किम् (*kim*), यदि (*yadi*) - तर्हि (*tarhi*), यथा (*yathā*) - तथा (*tathā*) Prefixes (*Upasargas*) - आङ् (*āṅ*), वि (*vi*), परि (*pari*), अनु (*anu*), अधि (*adhi*), उत् (*ut*), प्रति (*prati*), उप (*upa*), प्र (*pra*) निर् (*nir*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - I* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	M	S	S
CO 2	S	S	S	S	S
CO 3	S	S	M	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

100L2G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-II

Inst.Hrs. : 6	**Year : I**
Credits : 3	**Semester : II**

Paper II – Prose, Grammar and History of Sanskrit Literature

Course Outcomes	1. Understand and apply grammatical concepts in drafting sentences and paragraphs 2. Apply the rules and regulations in handling usage of Lrt lakara and Asmad Sabdah, practice exercises and identify errors 3. Form an idea of the aesthetic expressions that make Sanskrit composition get the position of pride in world literature 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in Sanskrit 5. Appreciate the art of employment of Alankaras in a prose form of poetry	
Course Objectives	Provide acquaintance with prose literature in Sanskrit through a study of one of the best texts of prose, which would pave the way for gaining sufficient grounding in the language	K1
	Enumerate various grammatical tenses and use them to communicate in Sanskrit language	K2
	Summarize the stories of Panchatantra and discuss in	K3
	Analyze and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate and comprehend text passages	K5
Units		
I	Introduction to Prose literature in Sanskrit Grammar: *ikārāntaḥ puṁliṅgāḥ śabdāḥ* - 1. कवि (*Kavi*) and 2. रवि (*Ravi*) *ikārāntaḥ strīliṅgaḥ śabdaḥ* - 1. मति (*Mati*) *īkārāntaḥ strīliṅgaḥ śabdaḥ* - 1. नदी (*Nadī*) *ikārāntaḥ napuṁsakaliṅgaḥ śabdaḥ* 1. वारि (*Vāri*)	
II	Introduction to *Māhābhārata,* the author of बालरामायणम् *(Bālarāmāyaṇam)* and his works Text: *Bālakāṇḍam* of *Bālarāmāyaṇam*	
III	Introduction to the works of *Baṇa* (*Kādambarī* and *Harṣacaritam*), *Daṇḍin* (*Daśakumāracaritam* and *Avantisundarīkathā*) and *Subandhu* (*Vāsavadattā*)	
IV	Introduction to Historical *Kāvyas* in Sanskrit - The works of *Kalhaṇaḥ, Bilhaṇaḥ, Bāṇaḥ* and *Pravarasenaḥ*	

| V | Grammar:
Conjugations - *Laṅ lakāraḥ* (Past tense)
(i) अगच्छत् (*Agacchat*) (ii) अतिष्ठत् (*Atiṣṭhat*) (iii) अपठत् (*Apaṭhat*)
(iv) अनृत्यत् (*Anṛtyat*) (v) अकुप्यत् (*Akupyat*) (vi) अकथयत् (*Akathayat*) (vii) अगणयत् (*Agaṇayat*) (viii) आसीत् (*Asīt*) (ix) अकरोत् (*Akarot*)
(x) अशृणोत् (*Aśṛṇot*)
Indeclinables:
(a) तुमुन् (*Tumun*) suffix ended words (Infinitive forms)
(i) गन्तुम् (*Gantum*) (ii) स्थातुम् (*Sthātum*) (iii) पठितुम् (*Paṭhitum*)
(iv) नर्तितुम् (*Nartitum*) (v) कोपितुम् (*Kopitum*) (vi) कथयितुम् (*Kathayitum*) (vii) गणयितुम् (*Gaṇayitum*) (viii) भवितुम् (*Bhavitum*) (ix) कर्तुम् (*Kartum*) (x) श्रोतुम् (*Śrotum*)
(b) क्त्वा (*Ktvā*) suffix ended words (Past passive participles)
(i) गत्वा (*Gatvā*) (ii) स्मृत्वा (*Smṛtvā*) (iii) गणयित्वा (*Gaṇayitvā*)
(iv) पठित्वा (*Paṭhitvā*) (v) कृत्वा (*Kṛtvā*)
(c) ल्यप् (*Lyap*) suffix ended words (Past passive participles)
(i) आगत्य (*Āgatya*) (ii) विस्मृत्य (*Vismṛtya*) (iii) विगणय्य (*Vigaṇayya*)
(iv) प्रपठ्य (*Prapaṭhya*) (v) अनुकृत्य (*Anukṛtya*) |
| **Book recommended for Reference** | *Kalāśālā-Saṁskṛta-Sukhabodhinī - II*
To be Published by: University of Madras, Chennai - 5 |

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	S	M	S
CO 2	S	M	S	S	S
CO 3	S	S	S	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

5

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L3G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-III

Inst.Hrs.	**: 6**	**Year**	**: II**
Credits	**: 3**	**Semester**	**: III**

Paper III – Drama, Grammar and History of Sanskrit Literature

Course Outcomes	1. Be familiar with the style of the great Sanskrit Dramatist Bhasa 2. Be able to appreciate the aesthetical, social, political, cultural, etc., values expressed in prescribed composition 3. Understand the structural patterns of Sanskrit dramatic composition 4. Develop the finer and minor nuances of Nataka form of drama 5. Analyze the literary texts
UNITS	
I	Introduction to Dramaturgy – Ten types of Drama - Characteristics and features (*Nāndī, Sūtradhāra, Sthāpanā* and *Bharatavākyam*) of Sanskrit Dramas. Prose Text: *Karṇabhāram* - Page. 01 - 10 (till 10 *Slokās*)
II	Characteristics and features (*Vastu, Netā* and *Rasas*) of Sanskrit Drama - Prose Text: *Karṇabhāram* - Page. 11 - 20 (till 17 *Slokās*)
III	Authorship of 13 Trivandrum play of *Bhāsa* - Introduction to the Dramas of *Kālidāsa, Bhavabhūti, Harṣavardhana* and *Rājaśekhara* Text: *Karṇabhāram* - Page. 21 - 32 (Upto the end)
IV	Introduction to the dramatic works of *Viśākhadatta, Śūdraka, Bhaṭṭanārāyaṇa* and *Murāri* - Introduction to Allegorical dramas 1. *Prabodhacandrodaya* and 2. *Saṅkalpasūryodaya*
V	Introduction to *Campū* literature 1. *Bhojacampū* 2. *Viśvaguṇādarśacampū* and 3. *Nalacampū* Grammar – *Lṛṭ lakārāḥ* (Future tense) (i) गमिष्यति (*Gamiṣyati*) (ii) स्थास्यति (*Sthāsyati*) (iii) पठिष्यति (*Paṭhiṣyati*) (iv) नर्तिष्यति (*Nartiṣyati*) (v) कोपिष्यति (*Kopiṣyati*) (vi) कथयिष्यति (*Kathayiṣyati*) (vii) गणयिष्यति (*Gaṇayiṣyati*) (viii) भविष्यति (*Bhaviṣyati*) (ix) करिष्यति (*Kariṣyati*) (x) श्रोष्यति (*Śroṣyati*) Declensions: (*Sarvanāmaśabdāḥ*) - 1. तद् शब्दः (*Tad śabdaḥ*) in all genders 2. अस्मद् शब्दः (*Asmad śabdaḥ*) 3. युष्मद् शब्दः (*Yuṣmad śabdaḥ*)

Course Objectives	Understand the structure and use of different phrases and Idioms in Sanskrit Drama and grammatical aspects of *Karṇabhāram*	K2
	Enhance one's ability to converse freely in the language, which is considered to be a specialized skill as far as the Sanskrit Language goes	K2
	Draft and summarize the literary texts	K3
	Identify and apply different grammatical peculiarities	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - III* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	M	S	S
CO 2	S	S	S	S	S
CO 3	S	M	M	S	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L4G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-IV

Inst.Hrs. : 6	**Year : II**
Credits : 3	**Semester : IV**

Paper IV – Alankara, Didactic & Modern literatures and Translation

Course Outcome	1. Apply the usage of compound words 2. Differentiate the alankaras 3. Translate the prose passages prescribed 4. Identify and apply different grammatical tenses of "Mahabharata" related translation 5. Analyze and critically assess the literary texts
UNITS	
I	Introduction to Didactic literature (*Pañcatantram* and *Hitopadeśaḥ*) Text: The lion and the hare शशकसिंहकथा (*Śaśakasiṃhakathā*) from Pañcatantram and The jackal and the elephant शृगालहस्तिकथा (*Śṛgālahastikathā*) a story from *Mitralābhaḥ* of *Hitopadeśaḥ*
II	*Alaṅkārāḥ - i. Upamā, ii. Rūpakam, iii. Ullekhaḥ, iv. Utprekṣā and v. Vyatirekaḥ*
III	Introduction to Modern literature - Introduction to अर्थशास्त्रम् (*Artha śāstram*) of चाणक्यः (*Cāṇakyaḥ*) - Introduction to मयमतम् (*Mayamatam*) - Introduction to नीतिद्विषष्टिका (*Nītidviṣaṣṭhikā*) - *Slokās* - 1 to 10 - Introduction to the life history of श्रीआदिशङ्कराचार्यः (*Śrī -Ādi śaṅkarācāryaḥ*), श्रीरामाजानुचार्यः (*Śrī Rāmānujācāryaḥ*) and श्रीमध्वाचार्यः (*Śrī Madhvācāryaḥ*)
IV	Introduction to Modern literature in Sanskrit - Text: तिरुक्कुरळ् संस्कृतानुवादः(Sanskrit translation of Tirukkural) *Slokās* 1 to 10 ईश्वरवन्दनम् (*Kaḍavuḷ Vāzhththu*) by कलियन् रामानुजजीयर् (*Kaliyan Rāmānujajīyar*) नालडियार् (*Nālaḍiyār*) translated by श्री एस्. एन्. रामदेशिकः (*Śrī S. N Rāmadeśika*) - *Slokās*: 1 to 5
V	Translation from prose section Unit - I stories Grammar: Conjugation - *Loṭ lakārāḥ* (Imperative mood) (i) गच्छतु (*Gacchatu*) (ii) तिष्ठतु (*Tiṣṭhatu*) (iii) पठतु (*Paṭhatu*) (iv) शृणोतु (*Śṛṇotu*) (v) करोतु (*Karotu*)

8

Course Objectives	Demonstrate the usage of connecting words	K2
	Understand the alankaras which are used in devotional lyrics	K2
	Draft and summarize the literary texts	K3
	Identify the meaning, types of figure of speech of the prescribed text	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - IV* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	S	S
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	S	M	S	S	S
CO5	S	S	S	S	M

S-Strong   M-Medium   L-Low

UNIVERSITY OF MADRAS

U.G. AND FIVE YEAR INTEGRATED PG DEGREE PROGRAMS

FOUNDATION COURSE: PART I – ARABIC

(EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024)

Programme:	U.G. AND FIVE YEAR INTEGRATED P.G. DEGREE PROGRAMS FOUNDATION COURSE: PART I – ARABIC
Programme Code:	BFC-LA23
Duration:	4 Semesters

On successful completion of this program, the graduates are expected to achieve the following:

Programme Outcomes:	1. Acquire the knowledge of the structure of Arabic words 2. Acquaint with the knowledge of basic Arabic grammar 3. Become familiar with the knowledge of phonetic system of Arabic language 4. Able to communicate in Arabic 5. Have the knowledge of moral values in the light of Quran and Hadith
Programme Specific Outcomes:	1. Understand the sounds and phrasing of Arabic language. 2. Learn the basic Arabic grammar 3. Develop communication skills in Arabic 4. Acquire new vocabulary in Arabic 5. Learn the moral values of the Holy Quran and Sunnah

List of Courses:

Semester	Course Code	Title of the Course	Foundation Course	Credits
I	100L1H	Paper I : Prose	FC	3
II	100L2H	Paper II : Grammar	FC	3
III	200L3H	Paper III : Communication Skill in Arabic	FC	3
IV	200L4H	Paper IV : Quran and Hadith	FC	3

1

Course I	Course Code	Title of the Course	Credits
FC	100L1H	Paper I : Prose	3

Course Outcomes	1. Understand the correct pronunciation of Arabic letters
	2. Understand the structure-based composition.
	3. Acquire new vocabulary in Arabic
	4. Read the Arabic sentences without diacritical marks
	5. Able to write the simple sentences in Arabic without errors.
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar.
	2. Understand the structure of Arabic language.
	3. Employ sentence making.
	4. Enhance vocabulary.
	5. Improve reading and writing skills.

	Units
I	(دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثالث عشر
IV	من الدرس الرابع عشر إلى الدرس الثامن عشر
V	من الدرس التاسع عشر إلى الدرس الثالث والعشرين

2

Prescribed Text Book	دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم Duroos Al-Lugha Al-Arabiyya – Part I, By Dr. V. Abdur Rahim
Reading List (Print and online)	معجم الكلمات الواردة في دروس اللغة العربية لغير الناطقين بها مفتاح دروس اللغة العربية لغير الناطقين بها القراءة الراشدة — الشيخ أبو الحسن علي الحسني الندوي القراءة المفيدة — الدكتور محمد يوسف كوكن العمري منهاج العربية — السيد النبي حيدرآبادي www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

3

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course II	Course Code	Title of the Course	Credits
FC	100L2H	Paper II : Grammar	3

Course Outcomes	1. Able to use basic grammatical structure. 2. Develop reading skills and reading speed 3. Acquire new vocabulary in Arabic 4. Understand the different types of sentences. 5. Able to construct simple sentences in Arabic
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the correct usage of Arabic grammar. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.

Units	
I	(قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثاني عشر

4

IV	من الدرس الثالث عشر إلى السادس عشر
V	من الدرس السابع عشر إلى الدرس العشرين
Prescribed Text Book	قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله Basic Arabic Grammar, By Dr. Syed Rahmathullah
Reading List (Print and online)	النحو الواضح — علي الجارم ومصطفى أمين دليل النحو الواضح — الدكتور بشير أحمد جمالي سهل العوامل __ الدكتور تاج الدين المناني النحو الميسر للكبار والصغار — علي محمود عقيلي القواعد التطبيقية في اللغة العربية — الدكتور نديم دعكور www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

5

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	3	1

3-Strong   2-Medium   1-Low

Course III	Course Code	Title of the Course	Credits
FC	200L3H	Paper III : Communication Skill in Arabic	3

Course Outcomes	1. Understand the basics of Arabic language. 2. Learn the structure of Arabic words. 3. Familiarize with the phonetic system of Arabic. 4. Able to communicate in Arabic 5. Able to translate from Arabic to English and vice versa
Pre-requisites, if any:	Nil
Course Objectives	1. Understand the sounds and phrasing of Arabic language. 2. Acquire new vocabulary and apply in context. 3. Develop communication skills in Arabic. 4. Understand the different aspects of communication. 5. Learn to communicate in everyday interactions.
Units	
I	(الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول — السعيد محمد بدوي وفتحي علي يونس) التعارف – في المطار (١)
II	في الفندق – في المطعم
III	في البنك – عند الطبيب (١)

6

IV	في الطريق – في مكتب البريد
V	في السوق (١) – في السوق (٢)
Prescribed Text Book	الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول – السعيد محمد بدوي وفتحي علي يونس Al Kitaab Al Asaasi Fi Taleem Al Lugha Al Arabiyya Li Ghair An Naatiqeena Biha - Part I, By Sayeed Muhaamad Badawi and Fathi Ali Yunus
Reading List (Print and online)	A Practice Book on Gulf Arabic, By Dr. Abdul Jaleel. T Arabic Conversation Book, By Mohd. Harun Rashid and Khalid Perwez A Hand book of Commercial Arabic by Dr. Aboobacker K.P العربية لغير العرب – د. مصطفى حسن الريس، الأزهر العربية للحياة – جامعة الملك سعود القراءة العربية لغير العرب – وزارة التربية بالكويت www.talkinarabic.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course IV	Course Code	Title of the Course	Credits
FC	200L4H	Paper IV : Quran and Hadith	3

Course Outcome	1. Know the principal textual sources of the Islamic tradition: The Qur'an and the Hadith.
	2. Know the role of Quran and Hadith in the synthesis of Islamic faith and practice.
	3. Understand the structure of Arabic grammar through Quran and Hadith.
	4. Understand the methodology of translation of Quran and Hadith.
	5. Understand the moral values of Quran and Hadith
Pre-requisites, if any:	Nil
Course Objectives	1. Know the importance of Quran and Hadith.
	2. Understand the style of Quran and Hadith.
	3. Understand the role of Quran and Hadith in the Islamic faith and law.

8

	4. Know the structure of Arabic grammar through the examples from Quran and Hadith.
	5. Learn the cultural and moral values.
Units	
I	(١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم)
	سورة لقمان
	من الآية ١ إلى الآية ١٠
II	من الآية ١١ إلى ٢٠
III	من الآية ٢١ إلى ٣٤
IV	أحاديث سهلة
	من الحديث ١ إلى الحديث ١٠
V	من الحديث ١١ إلى الحديث ٢٠
Prescribed Text Book	١. سورة لقمان من القرآن الكريم
	٢. أحاديث سهلة للدكتور ف. عبد الرحيم
	1) Sooratu Luqman
	2) Ahadeeth Sahlah By Dr. V. Abdur Rahim
Reading List (Print and online)	Tafsir Al-Jalalain
	The Noble Quran, Dr. Muhammad Muhsin Khan and Muhammad Taqi-Ud-Dhin Al-Hilali
	الأربعون النووية
	نصوص من الحديث النبوي الشريف، الدكتور ف. عبد الرحيم

9

	شرح أحاديث سهلة، الدكتور ش. عبد المالك
	https://quran.com/
	https://sunnah.com/nawawi40

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	1	2	3	3	3

3-Strong   2-Medium   1-Low

10

UNIVERSITY OF MADRAS

FOUNDATION COURSE: FRENCH

SYLLABUS WITH EFFECT FROM 2023-2024

UG & 5 Year PG Integrated – SEMESTER – III

Foundation Course: Translation, Comprehension and Grammar - I

Course Outcomes	1. Identify and appreciate the construction and the structure of different tenses and sentences 2. Translate simple texts 3. Draft and summarize literary texts 4. Apply the grammatical rules to express one's ideas using different tenses 5. Analyze literary texts with respect to their structure and composition		
Course	Foundation Course in French	**Course Code**	**200L3K**
Title of the Course:	Translation, Comprehension and Grammar – I		
Credits:	3		
Pre-requisites, if any:	-		
Course Objectives	Understand the structure and use of the different grammatical tenses		K2
	Translate texts and examine them		K2 and K4
	Draft summaries of literary texts		K2 and K6
	Identify the requirement and employ the different grammatical tenses		K3
	Analyze and critically assess the literary texts		K4 and K5
UNITS			
I	*Nos études* *Les feuilles mortes* Le passé composé		
II	*Demain dès l'aube* *Une visite inattendue* L'imparfait		
III	*La tortue et le chien* Le subjonctif Le conditionnel		
IV	*Le vrai Père* Les pronoms relatifs La comparaison		
V	*L'hiver* *La danse* L'expression du temps		
Prescribed Text	K. Madanagobalane & N.C. Mirakamal, *Le français par les textes*, Chennai, Samhita Publications – Goyal Publisher & Distributors Pvt Ltd, 2017		

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	M	M	M	M	L	S	S	S	S	S	M
CO 2	M	M	S	S	S	S	M	S	M	M	S	M	S
CO 3	S	M	S	M	M	M	M	S	S	S	M	S	M
CO 4	S	S	M	M	S	M	L	S	S	S	S	S	M
CO 5	M	M	S	S	S	M	M	S	S	S	M	S	M

S-Strong   M-Medium   L-Low

SEMESTER III

Title of the Paper : Translation, Comprehension and Grammar-I

Prescribed textbook: K.Madanagobalane &N.C.Mirakamal, *Le français par les textes*, Chennai, Samhita Publications-Goyal Publisher & Distributors Pvt Ltd, 2017

The following texts from the prescribed textbook:
- *Nos études*
- *Les feuilles mortes*
- *Demain dès l'aube*
- *Une visite inattendue*
- *La tortue et le chien*
- *Le vrai Père*
- *L'hiver*
- *La danse*

The following grammar components are chosen from the prescribed textbook:
- Le passé composé
- L'imparfait
- Le subjonctif

- Le conditionnel
- Les pronoms relatifs
- La comparaison
- L'expression du temps

<u>Paper setters to strictly adhere to the syllabus and ask questions only from the pages included in the syllabus. Questions should cover the entire syllabus.</u>

QUESTION PAPER PATTERN

Time : 3 Hours   Maximum Marks : 75

Section A (10 x 2 = 20 Marks)
<u>Answer any TEN questions</u>
15 short answer questions to be asked from the prescribed texts (name of the text might be included within brackets in the question)

Section B (5 x 5 = 25 Marks)
<u>Answer any FIVE questions</u>
8 Grammar exercises to be given from the prescribed textbook

Section C (3 x 10 = 30 Marks)
<u>Answer any THREE</u>
3 must be answered out of 5 topics (1 translation of a prescribed text, 1 translation of unknown text, 1 comprehension of unknown text, 2 summaries of the prescribed texts)

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UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

SECOND YEAR - SEMESTER III

PAPER II –GENERAL ENGLISH

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
200L3ZU	Part II	Y	Y	-	-	3	6	25	75	100

Learning Objectives	
LO1	To make them active listeners
LO2	To enhance the interpersonal relationship skills
LO3	To embolden them to cope with stress
LO4	To master grammar skills
LO5	To help them to use English effectively in a business environment

Unit No.	Unit Title & Text	No. of Periods for the Unit
I	**ACTIVE LISTENING** **Short Story** 1.1 In a Grove – AkutagawaRyunosuke Translated from Japanese by Takashi Kojima 1.2 The Gift of the Magi – O' Henry **Prose** 1.3 Listening – Robin Sharma 1.4 Nobel Prize Acceptance Speech – WangariMaathai	20
II	**INTERPERSONAL RELATIONSHIPS** **Prose** 2.1 Telephone Conversation – Wole Soyinka 2.2 Of Friendship – Francis Bacon **Song on (Motivational/ Narrative)** 2.3 Ulysses – Alfred Lord Tennyson 2.4 And Still I Rise – Maya Angelou	20
III	**COPING WITH STRESS** **Poem** 3.1 Leisure – W.H. Davies 3.2 Anxiety Monster – RhonaMcFerran **Readers Theatre** 3.3 The Forty Fortunes: A Tale of Iran 3.4 Where there is a Will – Mahesh Dattani	20
IV	**Grammar** 4.1 Phrasal Verbs & Idioms 4.2 Modals and Auxiliaries 4.3 Verb Phrases – Gerund, Participle, Infinitive	15

V	**Composition/ Writing Skills** 5.1 Official Correspondence – Leave Letter , Letter of Application, Permission Letter 5.2 Drafting Invitations 5.3 Brochures for Programmes and Events	15

Course Outcomes		
Course Outcomes	On completion of this course, students will;	
CO1	Listen actively	PO1,PO7
CO2	Develop interpersonal relationship skills	PO1,PO2,PO10
CO3	Acquire self-confidence to cope with stress	PO4,PO6,PO9
CO4	Master grammar skills	PO4,PO5,PO6
CO5	Carry out business communication effectively	PO3,PO8

Text Books (Latest Editions)	
1	WangariMaathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Jul 2023.
2	Mahesh Dattani, Where there is a Will. Penguin, 2013.
3	Martin Hewings, Advanced English Grammar, Cambridge University Press, 2000
4	EssentialEnglish Grammar by Raymond Murphy

Web Resources	
1	WangariMaathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Mon. 17 Jul 2023. https://www.nobelprize.org/prizes/peace/2004/maathai/lecture/
2	Telephone Conversation - Wole Soyinka https://www.k-state.edu/english/westmank/spring_00/SOYINKA.html
3	Anxiety Monster- RhonaMcFerran- www.poetrysoup.com

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	3	3	3	3	2	3	2
CO2	2	3	3	3	2	3	3	2	2	2
CO3	3	3	3	2	3	3	3	2	3	2
CO4	3	3	3	3	3	3	3	2	2	2
CO5	3	2	3	3	3	3	3	2	2	3

3 – Strong, 2 – Medium , 1 - Low

Mapping with Programme Specific Outcomes:

CO /PO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3
Weightage	15	15	15	15
Weighted percentage of Course Contribution to Pos	3.0	3.0	3.0	3.0

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II   **Semester: III**

Java Programming	225C3A
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 5	**Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To provide fundamental knowledge of object-oriented programming.
- To equip the student with programming knowledge in Core Java from the basics up.
- To enable the students to use AWT controls, Event Handling and Swing for GUI.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java
CO2: Implement inheritance, packages, interfaces and exception handling of Core Java.
CO3: Implement multi-threading and I/O Streams of Core Java
CO4: Implement AWT and Event handling.
CO5: Use Swing to create GUI.

Units	Contents
I	Introduction: Review of Object-Oriented concepts - Java buzzwords (Platform independence, Portability, Threads)- JVM architecture –Java Program structure - – Java main method - Java Console output(System.out) - simple java program - Data types - Variables - type conversion and casting- Java Console input: Buffered input - operators - control statements - Static Data - Static Method - String and String Buffer Classes
II	Java user defined Classes and Objects – Arrays – constructors - Inheritance: Basic concepts - Types of inheritance - Member access rules - Usage of this and Super key word - Method Overloading - Method overriding - Abstract classes - Dynamic method dispatch - Usage of final keyword -Packages: Definition - Access Protection - Importing Packages - Interfaces: Definition – Implementation – Extending Interfaces
III	Exception Handling: try – catch - throw - throws –- finally – Built-in exceptions - Creating own Exception classes - garbage collection, finalise -Multithreaded Programming: Thread Class - Runnable interface – Synchronization – Using synchronized methods – Using synchronized statement - Interthread Communication – Deadlock.
IV	The AWT class hierarchy - Swing: Introduction to Swing - Hierarchy of swing components. Containers - Top level containers - JFrame - JWindow - JDialog - JPanel - JButton - JToggleButton - JCheckBox - JRadioButton - JLabel,JTextField - JTextArea - JList - JComboBox – JscrollPane - Event Handling: Events - Event sources - Event Listeners - Event Delegation Model (EDM) - Handling Mouse and Keyboard Events
V	Adapter classes - Inner classes -Java Util Package / Collections Framework:Collection & Iterator Interface- Enumeration- List and ArrayList- Vector- Comparator

Learning Resources:

Recommended Texts

Herbert Schildt, The Complete Reference, Tata McGraw Hill, New Delhi, 7th Edition, 2010.

Gary Cornell, Core Java 2 Volume I – Fundamentals, Addison Wesley, 1999.

Reference Books

Head First Java, O'Rielly Publications, Y. Daniel Liang, Introduction to Java Programming, 7th Edition, Pearson Education India, 2010.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		Semester:III
Java Programming Practical Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS		**225C31**
Credits 5		**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To gain practical expertise in coding Core Java programs
- To become proficient in the use of AWT, Event Handling and Swing.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Code, debug and execute Java programs to solve the given problems
CO2: Implement multi-threading and exception-handling
CO3: Implement functionality using String and StringBuffer classes
CO4: Demonstrate Event Handling.
CO5: Create applications using Swing and AWT

List of Programs

1. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer?

2. Write a Java program to multiply two given matrices.

3. Write a Java program that displays the number of characters, lines and words in a text?

4. Generate random numbers between two given limits using Random class and print messages according to the range of the value generated.

5. Write a program to do String Manipulation using Character Array and perform the following string operations:

   a) String length
   b) Finding a character at a particular position
   c) Concatenating two strings

6. Write a program to perform the following string operations using String class:

   a) String Concatenation

   b) Search a substring

   c) To extract substring from given string

7. Write a program to perform string operations using StringBuffer class:

   a) Length of a string

   b) Reverse a string

   c) Delete a substring from the given string

8. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.

9. Write a threading program which uses the same method asynchronously to print the

numbers 1 to 10 using Thread1 and to print 90 to 100 using Thread2.

10.   Write a program to demonstrate the use of following exceptions.

   a) Arithmetic Exception

   b) Number Format Exception

   c) Array Index Out of Bound Exception

   d) Negative Array Size Exception

11.   Write a Java program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes?

12.   Write a program to accept a text and change its size and font. Include bold italic options. Use frames and controls.

13.   Write a Java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired. (Use adapter classes).

14.   Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -,*, % operations. Add a text field to display the result. Handle any possible exceptions like divide by zero.

   15. Write a Java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green with radio buttons. On selecting a button, an appropriate message with "stop" or "ready" or "go" should appear above the buttons in a selected color. Initially there is no message shown.

Learning Resources:
Recommended Texts
Herbert Schildt, The Complete Reference, Tata McGraw Hill, New Delhi, 7th Edition, 2010.
Gary Cornell, Core Java 2 Volume I – Fundamentals, Addison Wesley, 1999.
Reference Books
Head First Java, O'Rielly Publications, Y. Daniel Liang, Introduction to Java Programming, 7th Edition, Pearson Education India, 2010.
Web resources: Web resources from NDL Library, E-content from open-source libraries

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

<table>
<tr>
<td rowspan="3">Title of the Course</td>
<td colspan="6">MATHEMATICS – I
(Common to B.Sc-Physics, Physics with CA, Chemistry, Computer Science, ECS, Data Science, Artificial Intelligence, Software Applications & BCA)</td>
</tr>
</table>

Title of the Course	

Title of the Course	**MATHEMATICS – I** (Common to B.Sc-Physics, Physics with CA, Chemistry, Computer Science, ECS, Data Science, Artificial Intelligence, Software Applications & BCA)				
Paper Number	**ELECTIVE COURSE III**				
Category Elective	**Year** II **Semester** III	**Credits**	3	**Course Code**	**225E3A**
Instructional Hours per week	**Lecture**	**Tutorial**	**Lab Practice**	**Total**	
	4	1	--	5	
Pre-requisite	12th Standard Mathematics				
Objectives of the Course	• Necessary skills to analyze and make decision on Assignment and Transportation problems Simple Harmonic Motion • To solve real world problems on Sequencing and Network and its applications				
Course Outline	**UNIT-I: Summation of series**: Binomial series -Exponential series -Logarithmic series -Simple Problems. **Hours: 15** **Chapter 2: Sections: 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3.**				
	UNIT II: **Matrices:** Symmetric– Skew-Symmetric–Hermitian– Skew-Hermitian –Orthogonal and Unitary matrices– Cayley-Hamilton theorem (without proof) – Verification- Computation of inverse of matrix using Cayley - Hamilton theorem. **Chapter 4: Sections: 4.1.1 –4.1.6, 4.5.2 and 4.5.3. Hours: 15**				
	Unit III: **Numerical Methods:** Newton's method to find a root approximately. **Finite Differences**: Interpolation: Operators, Δ, ∇, E, E^{-1} difference tables. Interpolation formulae: Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula. **Hours:15** **Chapter 3: Sections 3.4.1. Chapter 5: Sections: 5.1 and 5.2.**				
	Unit IV: Trigonometry: Expansions of $\sin^n\theta$, $\cos^n\theta$ in a series of powers of $\sin\theta$ and $\cos\theta$ - Expansions of $\sin(n\theta)$ and $\cos(n\theta)$ in a series sines and cosines of multiples of "θ" - Expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in a series of powers of "θ" – Hyperbolic and inverse hyperbolic functions . **Chapter 6: Section 6.1 – 6.3 Hours:15**				
	Unit V: Differential Calculus: Successive differentiation, n th derivatives, Leibnitz theorem (without proof) and applications, Jacobians, maxima and minima of functions of two variables- Simple problems **Chapter 1, Section 1.1 to 1.3.1. Hours: 15**				
	Total Hours:75				

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)	Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
Recommended Text	Allied Mathematics, Volume I and Volume II by P. Duraipandian and S.Udayabaskaran, S. Chand Publications **Volume I: Unit I – IV, Volume II – Unit V**
Reference Books	1. Ancillary Mathematics by S. Narayanan and T.K. Manickavachagom Pillay, S. Viswanathan Pinters, 1986, Chennai 2. Allied Mathematics by A. Singaravelu 3. Allied Mathematics by P.R. Vittal
Website and e-Learning Source	1. http://www.themathpaage.com 2. http://nptel.ac.in

Course Learning Outcome (for Mapping with POs and PSOs)

Students will be able to

CLO 1: Understand the concepts of Summation of Series.

CLO 2: Understand the concepts of Cayley Hamilton Theorem and inverse matrices.

CLO 3: Understand the concepts of finite differences.

CLO 4: Understand the knowledge about expansions, hyperbolic and inverse hyperbolic functions.

CLO 5: Understand the concept of Leibnitz theorem and functions of two variables

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
CLO 1	2	3	1	3	1	1	3	1	1
CLO 2	3	2	1	3	1	1	3	1	1
CLO 3	3	2	1	3	1	1	3	1	1
CLO 4	3	3	1	3	1	1	3	1	1
CLO 5	3	2	1	3	1	1	3	1	1

-x-x-x-x-

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II   **Semester: III**

Elective: Statistics-I	225E3B
(Common to B.Sc.-CS with AI, CS with DS, Software Appl. & BCA)	
Lecture Hours: 5 per week	**Credits: 3**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

Course Outcomes: (for students: To know what they are going to learn)
1. Know the uses of statistics in society
2. Organize, manage and present data
3. Analyze the statistical data graphically using frequency distribution and cumulative frequency distribution.
4. Analyze statistical data using measures of central tendency, dispersion and location.
5. To understand correlation between continuous variables and association between categorical variables.

Units	Contents
I	Methods of collection: Complete enumeration – Sample Survey - Primary data - Secondary data sources - Types of variables. Norminal, ordinal and scale data. Presentation of Data: Presentation of data by tables - construction of tables (Univariate and Bivariate) – frequency table and contingency table
II	Diagrammatic presentation: Line diagram, Bar diagrams: Simple, multiple, subdivided and Percentage-Pie chart, comparative pie chart - Graphical representation of a frequency distribution by histogram and frequency polygon and Ogives
III	Analysis of Data (Univariate): Measures of central tendency: Arithmetic mean-Median and Mode choice of an average-characteristic of a good average
IV	Measures of dispersion: Range-Quartile deviation-mean deviation - standard deviation - relative measures of dispersion - Coefficient of Variance
V	Analysis of Data (Bivariate): Correlation- Scatter plot-coefficient of correlation-Pearson's Correlation Coefficient, Spearmen's rank correlation coefficient-correlation coefficient for bivariate frequency table- Association of attributes: Chi-square test of independence of attributes

Suggested Readings:
Books for study:
1. Gupta, S.C and Kapoor, V. K (2002), *Fundamentals of Mathematical Statistics*, Sultan Chand and Sons, New Delhi.
2. Goon A.M., Gupta M.K. and Dasgupta B. (2002): *Fundamentals of Statistics*, Vol. I & II, 8th Edn. The World Press, Kolkata.
3. Irwin Miller, Marylees Miller (2006): *John E. Freund's Mathematical Statistics with Applications*, (7th Edn.), Prentice Hall International INC.
4. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007): *Introduction to the Theory of Statistics*, 3rd Edn., (Reprint), Tata McGraw-Hill Pub. Co. Ltd

Books for reference:
1. Saxena H.C.: *Elementary Statistics*. S. Chand & Co., 2009.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		Semester: III
Elective: Physics-I (Theory) (Common to B.Sc. CS with AI & Software Applications)		**225E3C**
Lecture Hours: 3 per week		**Credits: 2**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

This paper introduces the students to the basic concepts of Elasticity, Rotational motion, Heat and thermodynamics, Sound, Optics, Atomic and Nuclear Physics

Course Outcomes: (for students: To know what they are going to learn)
1. Explore the fundamental concepts of physics
2. Import knowledge about the importance of material properties, heat, sound, optics, atomic and nuclear physics.
3. Understand the energy involved in nuclear reaction
4. Carry out the practical by applying these concepts
5. Get depth knowledge of physics in day today life

Units	Contents
I	Properties of Matter Young's modulus – Rigidity modulus – Bulk modulus – Poisson's ratio (definition alone) – Bending of beams – Expression for Bending Moment – Determination of Young's Modulus – Uniform and Non-Uniform bending. Expression for Couple per unit twist – Work done in twisting a wire – Torsional oscillations of a body– Rigidity modulus of a wire and M.I. of a disc by Torsion Pendulum.
II	Viscosity Viscosity – Viscous force – Co-efficient of Viscosity – Units and Dimensions – Poiseuille's formula for co-efficient of viscosity of a liquid – determination of co-efficient of viscosity using burette and comparison of Viscosities - Bernoulli's theorem – Statement and proof – Venturi meter – Pitot tube.
III	Conduction, Convection and Radiation Specific heat Capacity of Solids and Liquids – Dulong and Petit's law – Newton's law of Cooling – Specific Heat Capacity of a Liquid by Cooling – Thermal Conduction –Coefficient of Thermal Conductivity by Lee's disc Method. Convention Process – Lapse Rate – Green House Effect – Black Body Radiation – Planck's Radiation Law – Rayleigh Jean's Law, Wien's Displacement Law – Stefan's Law of Radiation. (No Derivations).
IV	Thermodynamics Zeroth and I Law of Thermodynamics – II law of Thermodynamics – Carnot's engine and Carnot's cycle – Efficiency of a Carnot's Engine – Entropy – Change in Entropy in Reversible and Irreversible Process – Change in entropy of a perfect gas – Change in Entropy when Ice is converted into steam.

V	Optics
	Interference – Conditions for Interference Maxima and Minima – Air Wedge – Thickness of A Thin Wire – Newton's Rings – Determination of Wavelength Using Newton's Rings.
	Diffraction – Difference Between Diffraction and Interference – Theory of Transmission Grating – Normal Incidence – Optical Activity – Biot's Laws – Specific Rotatory Power – Determination of Specific Rotatory Power Using Laurent's Half Shade Polarimeter.

TEXT BOOKS:
BOOKS FOR STUDY:

1. Properties of matter, Brijlal and Subramanyam, Eurasia Publishing co., New Delhi, III Edition 1983

2. Element of properties of matter, D.S.Mathur, S.Chand& Company Ltd, New Delhi, 10th Edition 1976

3. Heat and Thermodynamics, Brijlal&Subramanyam, S.Chand& Co, 16th Edition 2005

4. Heat and Thermodynamics, D.S. Mathur, Sultan Chand& Sons, 5th Edition 2014.

5. Optics and Spectroscopy, R.Murugeshan, S.Chand and co., New Delhi, 6th Edition 2008.

6. A text book of Optics, Subramanyam and Brijlal, S. Chand and co., New Delhi, 22nd Edition 2004.

7. Optics, Sathya Prakash, Ratan PrakashanMandhir, New Delhi, VII Edition 1990.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		**Semester: III**
Web Page Design Practical		**225S31**
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS		
Credits 1	**Lecture Hours:1 per week**	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
• To develop the skill & knowledge of Web page design.
• Students will understand the knowhow and can function either as an entrepreneur or can take up jobs in the multimedia and Web site development studio and other information technology sectors.
Course Outcomes: (for students: To know what they are going to learn)
CO1: Define the principle of Web page design
CO2: Define the basics in web design
CO3: Visualize the basic concept of HTML.
CO4: Recognize the elements of HTML.
CO5: Introduce basics concept of CSS.

Units	Contents
I	What is HTML? - HTML Documents - Basic structure of an HTML document - Creating an HTML document - Mark up Tags - Heading-Paragraphs - Line Breaks - HTML Tags.
II	Introduction to elements of HTML: Working with Text - Working with Lists, Tables and Frames - Working with Hyperlinks, Images and Multimedia - Working with Forms and controls.
III	Concept of CSS: Creating Style Sheet - CSS Properties - CSS Styling(Background, Text Format, Controlling Fonts) - Working with block elements and objects - Working with Lists and Tables - CSS Id and Class - Box Model(Introduction, Border properties, Padding - Properties, Margin properties) -
IV	CSS Advanced (Grouping, Dimension, Display,Positioning, Floating, Align,Pseudo class, Navigation Bar,Image Sprites, Attribute sector)- CSS Color- Creating page Layout and Site Designs
V	Introduction to Web Graphics: Creating a Web Photo Album - Creating a Button-Creating a Web Page Banner

Learning Resources:
Text Books
1. Kogent Learning, Solutions Inc., HTML 5 in simple steps Dreamtech Press
2. A beginner's guide to HTML NCSA,14th May,2003
3. Murray,Tom/Lynchburg Creating a Web Page and Web Site College,2002
Reference Books
1. Web Designing & Architecture-Educational Technology Centre, University of Buffalo
2. Steven M. Schafer HTML, XHTML, and CSS Bible, 5ed Wiley India
3. John Duckett Beginning HTML, XHTML, CSS, andJavaScript, Wiley India

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		**Semester: III**
Desktop Publishing Practical		**225S32**
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS		
Credits 2		**Lecture Hours:2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- The objective of the course is to provide the participants understanding of the techniques essential to build their career in desktop publishing using suitable hardware and software tools.
- This course offers a range of topics of immediate relevance to industry and makes the participants exactly suitable for DTP Industry.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Understand basics of computer and its related terminology.
CO2: Write, Edit & Print documents using MS-WORD & EXCEL
CO3: Understand various software used for Desktop Publishing andwould be able to create and design documents with text and graphics like newspaper ad, wedding cards, visiting cards, greeting cards etc.
CO4: Using PageMaker, CorelDraw & Photoshop. Understand Colourconcept in Printing

Units	Contents
I	Computer Fundamentals - Generations of Computer, Advantage and disadvantage of Computer, Block Diagram of a Computer, Description of Different parts of a computer. System Software and Application Software MS Office Introduction to MS Office, Word Processing Software, Electronic Spreadsheet, MS Paint
II	PageMaker Introduction to various versions, concepts and applications of PageMaker Guides & rulers. Drawing tools. Fills & outlines Photo Shop -History & introduction, the file menu, the tools, Drawing lines & shapes Photo editing inserting starting with Setting Up, introduction of layers,Understanding Design principles and color theory
III	Coral Draw-Drawing-lines, shapes inserting-pictures, objects, tables, templates, Use of various tools such as Pick tools, Zoom tools, Free hand tool, square tool, rectangle tool, Text tool, Fill tool etc. and all fonts used in designing of monograms, logos, posters, stickers, greeting cards, wedding cards, visiting cards, etc Design Principles & Color Harmony Introduction to colors Primary and Secondary in both RGB & CMYK schemes/modes

List of Programs

1. Using windows explorer and other windows elements
2. Creating and opening a document in page maker
3. Formatting and editing a document
4. Saving and printing a given document
5. Insertion of text and graphics in a given document from external source
6. Using columns utility, to give the document column look

7. Using various fonts and styles to make a document more beautiful
8. Use of page maker to make transparencies
9. Saving and printing a file that has been created
10. Formatting a given file by using undo/redo, repeat, cut, copy, paste, delete, duplicate and clone utilities
11. Inserting objects in the drawing, aligning, ordering, grouping and ungrouping of those objects
12. Use of combine, break apart, weld, intersection, trim and separate tools in given drawing
13. Use of mode edit tools ie, to line, to curve, to stretch, and rotate
14. Creating special effects i.e, transform roll-up, envelop roll up, add perspective, extrude roll up, contour roll up, power line, power clip, clear effects
15. To insert character and paragraph text in a drawing and frame, setting of tabs, indents, bullets and spacing in paragraph text
16. Filling of text to a given path, aligning it to base line, straighten text and edit text
17. Using tools such as spell checker, and thesaurus
18. Using find and replace text utility and type assist
19. Adding various symbols to a drawing and creating different pattern

Learning Resources:
1. Desk Top Publishing From A to Z by Bill Grout and Osborne; McGraw Hill
2. DTP (Desk Top Publishing) for PC user by Houghton; Galgotia Publishing House Pvt. Ltd., Daryaganj, New Delhi.
3. ADOBE PAGEMAKER 6.5 - Shashank Jain & Satish Jain - First Edition 2001, BPB Publications
4. DESKTOP PUBLISHING ON PC-M.C. Sharma, BPB Publications
5. Corel draw the Official Guide By Gray David Bouton, Corel Press.
6. The complete Reference Getting Started with Page Maker, McGraw-Hills
7. Adobe Photoshop CS2 Classroom In A Book (2020), Adobe Press.
8. Computers Today S.K.Basandra, Galgotia Publications.
9. Microsoft Office: Will Train, Gini Courter, Annette Marquis BPB Publication.

Suggested equivalent online courses:

http://www.nptelvideos.com/adobe/adobe photoshop tutorials.php

https://onlinecourses.swayam2.ac.in/cec20 cs05/preview

https://eskillindia.org/Course/course detail/117206920200221051647

https://www.udemy.com/course/desktop-publishing-for-you/

https://www.youtube.com/watch?v=FJYgNUYUvZe

செ ன்னைப் பல்கலைக்கழகம்
University of Madras

Part-I

பொதுத் தமிழ் - பாடத்திட்டம்

General Tamil - Syllabus

4 பருவங்கள் (நான்காம் பருவம்)

(B.A., B.Sc., B.Com., BCA., BBA)

2023-24

பொதுத்தமிழ் -4
தமிழும் அறிவியலும்
இரண்டாம் ஆண்டு – நான்காம் பருவம்

Course Code	Course Name	category	L	T	P	S	Credits	Ins.Hrs	CIA	Externa	Total
200L4AU	பொதுத்தமிழ் -4 தமிழும் அறிவியலும்	Supportive	Y	-	-	-	3	6	25	75	100

Learning Objectives

- தாய்மொழி வழியாக அறிவியல் பற்றிய சிந்தனைகளை வளர்த்தல்.
- அறிவியல் கலைச் சொல்லாக்கம் பற்றிப் பயிற்றுவித்தல்.
- மாணவர்களுக்கு அறிவியல் பார்வையை ஏற்படுத்துதல்.
- தமிழில் அறிவியல் படைப்பிலக்கியங்களை உருவாக்கத் தூண்டுதல்
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்

Expected Course Outcomes

On the Sucessful completion of the Course, Students will be able to

இப்பாடத்தைக் கற்பதால் பின்வரும் பயன்களை மாணவர் அடைவர்

CO 1	தாய்மொழி வழியாக அறிவியல் பற்றிச் சிந்திக்கும் திறன் பெற்றிருப்பர்.	K4
CO 2	அறிவியல் கலைச் சொல்லாக்கம் பற்றிய விதிகள், நுணுக்கங்களைத் தெரிந்திருப்பர்.	K5, K6
CO 3	அறிவியல் தமிழ் வளர்ச்சியில் மொழிபெயர்ப்பின் பங்கு குறித்து அறிந்திருப்பர்.	K3
CO 4	மொழியறிவோடு சிந்தனைத்திறனைப் பெறுவர்	K3
CO 5	மொழிப்பயிற்சிக்குத் தேவையான இலக்கணங்களைக் கற்பர்.	K2

K1 - Remember; K2 - Undestand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

அலகு-1	தமிழரின் அறிவியல் சிந்தனைகள்

- அறிவியலும் மனித வாழ்வும்
- ஐந்திணைப் பகுப்பும் சூழலியலும்
- தொழில்நுட்ப மேலாண்மை
- நீர் நில மேலாண்மை

அலகு-2	பழந்தமிழ் இலக்கியங்களில் அறிவியல் சிந்தனைகள்

1. நிலவியல்
2. உலோகவியல்
3. வானவியல்
4. உயிரியல்
5. உளவியல்

அலகு-3	இடைக்கால இலக்கியங்களில் அறிவியல் சிந்தனைகள்
1. காப்பியங்களில் அறிவியல்	
2. சிற்றிலக்கியங்களில் அறிவியல்	
3. உரைநூல்களில் அறிவியல்	
அலகு-4	இணையத் தமிழ்
1. இணையத் தமிழ் பயன்பாடு - அறிமுகம்	
2. இணையத்தமிழ்க் கல்விக்கழகம்	
3. இணைய நூலகம்	
4. செயற்கை நுண்ணறிவியல்	
5. தமிழ்நாட்டு அறிவியல் ஆளுமைகள்	
அலகு-5	கடிதம் எழுதுதலும் கட்டுரை எழுதுதலும்
• உறவு முறைக் கடிதப் பயிற்சி • அலுவலகக் கடிதப் பயிற்சி • விண்ணப்பப் படிவம் எழுதும் பயிற்சி • தன் விவரப் படிவம் எழுதும் பயிற்சி • கருத்து விளக்கக் கட்டுரைகள் எழுதும் பயிற்சி • பத்திரிகைகளுக்குக் கட்டுரை எழுதும் பயிற்சி	

Text books

- அறிவியல் தமிழ் இன்றைய நிலை - இராதா செல்லப்பன், உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை.

- மணவை முஸ்தபா, தமிழில் அறிவியல் படைப்பிலக்கியம், மணவை பப்ளிகேஷன், சென்னை.

- கலைச்சொல்லாக்கம் - மங்கை, ரங்கராசபுரம், சென்னை .

Reference Books

1.தமிழர் வேளாண்மை மரபுகள் - இல).செ.கந்தசாமி

- 2. சங்க இலக்கியத்தில் வேளாண் சமுதாயம், பெ.மாதையன், நியூ செஞ்சுரி புக் ஹவுஸ்

 3. தமிழில் அறிவியல் இதழ்கள்சாமுவேல்- ரா.பார்வேந்தன் ஃபிஷ்கிறீன் பதிப்பகம், கோவை

4. அறிவியல் தமிழ் - பதிப்பாசிரியர் இராதா செல்லப்பன்,பாரதிதாசன் பல்கலைக்கழகம், திருச்சிராப்பள்ளி.

5. இணையத் தமிழ் வரலாறு, மு.பொன்னவைக்கோ, பாரதிதாசன் பல்கலைக்கழகம்

6. இணையத் தமிழ், சந்திரிகா சுப்பிரமணியம் - சந்திரோதயம் பதிப்பகம்

7. இணையமும் இனிய தமிழும் - துரை. மணியரசன், இசை பதிப்பகம்

8. கணினித் தமிழ், இல. சுந்தரம் - விகடன் பிரசுரம்

9. மாண்புமிகு மண், பாமயன், வம்சி புக்ஸ்

10. தமிழ் இலக்கியத்தில் அறிவியல் சிந்தனைகள் வானதி பதிப்பகம், சென்னை
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]
Web Sources

- https://www.chennailibrary.com/
- https://www.sirukathaigal.com
- https://www.tamilvirtualuniversity.org
- https://www.noolulagam.com
- https://www.katuraitamilblogspot.com

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2	1.
CLO1	3	2	3	3	3	2	2	2	3	2	3	2	
CLO2	3	3	2	2	2	3	2	3	3	2	2	2	
CLO3	3	2	3	3	2	2	2	3	2	3	3	2	
CLO4		3	3	2	2	2	3	2	3	2	3	3	
CLO5	3	3	2	2	2	3	3	2	2	2	3	3	

Strong -3,Medium-2,Low-

UNIVERSITY OF MADRAS

UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE

EXISTING SYLLABUS (22-23) FOLLOWED FOR THE ACADEMIC YEAR 2023-2024

200L4E

FOUNDATION COURSE: PART-I HINDI PAPER-IV

Inst.Hrs. : 6	**Year : II**
Credits : 3	**Semester : IV**

PAPER –IV MODERN POETRY AND INTRODUCTION TO HINDI LITERATURE (AADHUNIK KAAL)	
Duration:	**1 Semester**
Programme Outcomes:	1. Identify the Modern poets and their works, contribution to society and Literature 2. Studies the contemporary conditions and its impact on Modern poets 3. Understand and differentiate the message of poets their expressional and artistic skills and 4. Evaluation and critical study of Modern Poetry and Trends of Ancient Literature 5. Obtain the skills of summerise, interpretation of contexts and literary attitude
Programme Specific Outcomes:	1. Basic knowledge of modern Poets and their works 2. Basic Knowledge of History of Hindi literature and its trends 3. Obtain skills of briefing, interpretation and evaluation 4. Basic idea of critical and analytical study of literature. 5. Obtain the application knowledge of relation between contemporary condition and literature and its impact on poets

Course Objectives		
	1. Identify the modern trends of Modern Hindi literature, different forms of modern literature i.e. poetry, fiction etc.	K1
	2. Summarise the content of prescribed poems and understand the trends of modern Hindi Literature .	K2
	3. Critical study and analysis of artistic skills of poets and their expression skills	K4
	4. Employ the methods of interpreting contexts, ideas and identify the poetic skills through practicing annotation writing	K3 K5
	5. Differentiate the subject and poetic skills of prescribe poems with each other and also know about contemporary poets , writers and the impact of contemporary situations	K6
	6. Conceive the aims of Literature and relations between	

	Literature and contemporary society	

Pre-requisites, if any:	Basic knowledge of Modern Hindi poets and their poetry

UNITS	
I	1. Asha – (Jayashankar Prasad) 2. Tum Logon se Door (Nagarjun) 3. Literary Trends of Chayavaad
II	1. Kavi Aur Kalpana – (Dhramaveer Bhaarathi) 2. Bharat Ki Aarthi - (Shamsher Bahadhur Singh) 3. Literary Trends of Pragathivaad
III	1. Varadan Mangoonga Nahi (Siva Mangal Singh Suman) 2. Anevalon Se Ek Savaal (Bharat Bhooshan Agarwal) 3. Literary Trends of Nayee Kavita
IV	1. Literary Trends of Hindi Short Stories 2. Literary Trends of Hindi One Act Plays 3. Maithili Saran Gupta, Mahadevi Varma,
V	1. Jayashankar Prasad, Nirala, 2. Panth, Dinakar, Premchand, 3. Yashpaal, Jainendra Kumar, Mohan Rakesh,

Course Outcomes	1. Evaluate the poetic skills of poets and their poems 2. Identify the conditions inspire the poets and writers 3. Enumerate the literary trends and different literary forms 4. Understand the human, social, ethical and literary values 5. Obtain the knowledge to evaluate and critical analysis of literary works

Reading List (Print and Online)	1. Hindi Sahithya Ka Itihas, By: Ramchandra Shukla, Jaya Bharati Publications, 217, B, Maya Press Road, Allahabad – 211 003. 2. Hindi Sahithya Yug Aur Pravrithiya By: Dr. Sivakumar Varma, Asok Prakashan Nayi Sarak, New Delhi – 6. 3. Hindi Sahithya ka Itihas By : Gulabroy, Lakshmi Narayana Agarwal Book Publishers and seller, Anupama Plaza – 1, Block No. 50, Sanjay Palace, Agra – 282002

Recommended Texts	6. Poetry Selection Madras University Publications University of Madras

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	S	S	S
CO 2	S	S	M	S	M
CO 3	S	S	M	S	S
CO 4	M	M	S	S	S
CO 5	S	S	S	S	S

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

Programme:	**I & II UG – Second Language - SANSKRIT**
Programme Code:	**BFC-LS22**
Duration:	**2 years**
Programme Outcomes:	After successful completion of the course, learners will be able to: 1. Create simple sentences using different grammatical tenses 2. Sensitize the students to the functioning of the language 3. Know the historical and cultural perspective of literary trends and movements in Sanskrit and in its literature 4. Define the origin of Sanskrit Literature 5. Demonstrate different teaching methodologies 6. Translate simple passages 7. Consolidate their communication skills in both spoken and written Sanskrit.
Programme Specific Outcomes:	1. Understand and appreciate the aesthetical, social, political, cultural, etc., values expressed in various prescribed texts 2. Apply different grammatical rules to their reading and writing assignments 3. Identify the base words of nouns and different tenses 4. Read, understand, write and speak in simple Sanskrit 5. Translate simple sentences related to the themes given

List of Courses:

Semester	Course Code	Title of the Course	Core/Elective/ Soft Skill	Credits
I	BFC-LS001	Paper I – Poetry, Grammar and History of Sanskrit Literature	C	3
II	BFC-LS002	Paper II – Prose, Grammar and History of Sanskrit Literature	C	3
III	BFC-LS003	Paper III – Drama, Grammar and History of Sanskrit Literature	C	3
IV	BFC-LS004	Paper IV – Alankara, Didactic & Modern literatures and Translation	C	3

1

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

100L1G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-I

Inst.Hrs. : 6		**Year** : I	
Credits : 3		**Semester** : I	

Paper I – Poetry, Grammar and History of Sanskrit Literature

Course Outcomes	1. Remember the usage of grammatical tenses in constructing sentences in dialogue. 2. Apply the rules of usage in practice exercises and identify errors 3. Explain the nuances in the usage of various grammatical tenses and aspects 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in French 5. Communicate in French and summarize the given text	
Course Objectives	Understand the basic Sanskrit sentence structure	K1
	To provide the glimpses of the rich Sanskrit literary tradition through reading the literary composition	K2
	Explain the language of this Mahakavya which is highly elaborate and polished with continual play upon words and variety of metres	K3
	Analyse and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate grammatical nature of verses	K5
Units		
I	Introduction to Sanskrit (Alphabets, Two letter words and three letter words) Grammar: *akārāntaḥ puṁliṅgaḥ śabda-s* - 1. बाल (*Bāla*) and 2. देव (*Deva*) *ākārāntaḥ strīliṅgaḥ śabda-s* - 1. बाला (*Bālā*) and 2. लता (*Latā*) *akārāntaḥ napuṁsakaliṅgaḥ śabda-s* - 1. फल (*Phala*) and 2. वन (*Vana*)	
II	Introduction to *Rāmāyana, Kālidāsa* and his poetic works Text: *Raghuvaṁśa* (Canto I) Verses 1-15	
III	Introduction to the works of *Bhāravi* - Text: *Raghuvaṁśa* (canto I) Verses 16-30	
IV	Introduction to the works of *Śrī Harṣha* - Text: *Raghuvaṁśa* (Canto I) Verses 31-45	
V	Grammar: Conjugations - *Laṭ lakāra-s* – (Present tense) (i) गच्छति (*Gacchati*) (ii) तिष्ठति (*Tiṣṭhati*) (iii) पठति	

	(*Paṭhati*)
	(iv) नृत्यति (*Nṛtyati*) (v) कुप्यति (*Kupyati*) (vi) कथयति (*Kathayati*)
	(vii) गणयति (*Gaṇayati*) (viii) अस्ति (*Asti*)
	(ix) करोति (*Karoti*) (x) शृणोति (*Śṛṇoti*)
	Indeclinables (Avyayaani) - अपि (*api*), कदा (*kadā*), च (*ca*), अद्य (*adya*), विना (*vinā*), सह (*saha*), तत्र (*tatra*), किम् (*kim*), यदि (*yadi*) - तर्हि (*tarhi*), यथा (*yathā*) - तथा (*tathā*)
	Prefixes (*Upasargas*) - आङ् (*āṅ*), वि (*vi*), परि (*pari*), अनु (*anu*), अधि (*adhi*), उत् (*ut*), प्रति (*prati*), उप (*upa*), प्र (*pra*) निर् (*nir*)
Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - I* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	S	M	S	S
CO 2	S	S	S	S	S
CO 3	S	S	M	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

100L2G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-II

Inst.Hrs. : 6   **Year   : I**
Credits   : 3   **Semester : II**

Paper II – Prose, Grammar and History of Sanskrit Literature

Course Outcomes	1. Understand and apply grammatical concepts in drafting sentences and paragraphs 2. Apply the rules and regulations in handling usage of Lrt lakara and Asmad Sabdah, practice exercises and identify errors 3. Form an idea of the aesthetic expressions that make Sanskrit composition get the position of pride in world literature 4. Demonstrate knowledge of various expressions of opinion, emotions, cause, effect, purpose, and hypothesis in Sanskrit 5. Appreciate the art of employment of Alankaras in a prose form of poetry	
Course Objectives	Provide acquaintance with prose literature in Sanskrit through a study of one of the best texts of prose, which would pave the way for gaining sufficient grounding in the language	K1
	Enumerate various grammatical tenses and use them to communicate in Sanskrit language	K2
	Summarize the stories of Panchatantra and discuss in	K3
	Analyze and interpret expressions of cause, effect, purpose, and opposition in Sanskrit	K4
	Evaluate and comprehend text passages	K5
Units		
I	Introduction to Prose literature in Sanskrit Grammar: *ikārāntaḥ puṁliṅgāḥ śabdāḥ* - 1. कवि (*Kavi*) and 2. रवि (*Ravi*) *ikārāntaḥ strīliṅgaḥ śabdaḥ* - 1. मति (*Mati*) *īkārāntaḥ strīliṅgaḥ śabdaḥ* - 1. नदी (*Nadī*) *ikārāntaḥ napuṁsakaliṅgaḥ śabdaḥ* 1. वारि (*Vāri*)	
II	Introduction to *Māhābhārata,* the author of बालरामायणम् *(Bālarāmāyaṇam)* and his works Text: *Bālakāṇḍam* of *Bālarāmāyaṇam*	
III	Introduction to the works of *Baṇa* (*Kādambarī* and *Harṣacaritam*), *Daṇḍin* (*Daśakumāracaritam* and *Avantisundarīkathā*) and *Subandhu* (*Vāsavadattā*)	
IV	Introduction to Historical *Kāvyas* in Sanskrit - The works of *Kalhaṇaḥ, Bilhaṇaḥ, Bāṇaḥ* and *Pravarasenaḥ*	

4

V	Grammar:
	Conjugations - *Laṅ lakāraḥ* (Past tense)
	(i) अगच्छत् (*Agacchat*) (ii) अतिष्ठत् (*Atiṣṭhat*) (iii) अपठत् (*Apaṭhat*)
	(iv) अनृत्यत् (*Anṛtyat*) (v) अकुप्यत् (*Akupyat*) (vi) अकथयत् (*Akathayat*) (vii) अगणयत् (*Agaṇayat*) (viii) आसीत् (*Asīt*) (ix) अकरोत् (*Akarot*)
	(x) अशृणोत् (*Aśṛṇot*)
	Indeclinables:
	(a) तुमुन् (*Tumun*) suffix ended words (Infinitive forms)
	(i) गन्तुम् (*Gantum*) (ii) स्थातुम् (*Sthātum*) (iii) पठितुम् (*Paṭhitum*)
	(iv) नर्तितुम् (*Nartitum*) (v) कोपितुम् (*Kopitum*) (vi) कथयितुम् (*Kathayitum*) (vii) गणयितुम् (*Gaṇayitum*) (viii) भवितुम् (*Bhavitum*) (ix) कर्तुम् (*Kartum*) (x) श्रोतुम् (*Śrotum*)
	(b) क्त्वा (*Ktvā*) suffix ended words (Past passive participles)
	(i) गत्वा (*Gatvā*) (ii) स्मृत्वा (*Smṛtvā*) (iii) गणयित्वा (*Gaṇayitvā*)
	(iv) पठित्वा (*Paṭhitvā*) (v) कृत्वा (*Kṛtvā*)
	(c) ल्यप् (*Lyap*) suffix ended words (Past passive participles)
	(i) आगत्य (*Āgatya*) (ii) विस्मृत्य (*Vismṛtya*) (iii) विगणय्य (*Vigaṇayya*)
	(iv) प्रपठ्य (*Prapaṭhya*) (v) अनुकृत्य (*Anukṛtya*)
Book recommended for Reference	*Kalāśālā-Saṃskṛta-Sukhabodhinī - II* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	S	M	S
CO 2	S	M	S	S	S
CO 3	S	S	S	M	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

5

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L3G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-III

Inst.Hrs. : 6   **Year   : II**
Credits   : 3   **Semester : III**

Paper III – Drama, Grammar and History of Sanskrit Literature

Course Outcomes	1. Be familiar with the style of the great Sanskrit Dramatist Bhasa 2. Be able to appreciate the aesthetical, social, political, cultural, etc., values expressed in prescribed composition 3. Understand the structural patterns of Sanskrit dramatic composition 4. Develop the finer and minor nuances of Nataka form of drama 5. Analyze the literary texts
UNITS	
I	Introduction to Dramaturgy – Ten types of Drama - Characteristics and features (*Nāndī, Sūtradhāra, Sthāpanā* and *Bharatavākyam*) of Sanskrit Dramas. Prose Text: *Karṇabhāram* - Page. 01 - 10 (till 10 *Slokās*)
II	Characteristics and features (*Vastu, Netā* and *Rasas*) of Sanskrit Drama - Prose Text: *Karṇabhāram* - Page. 11 - 20 (till 17 *Slokās*)
III	Authorship of 13 Trivandrum play of *Bhāsa* - Introduction to the Dramas of *Kālidāsa, Bhavabhūti, Harṣavardhana* and *Rājaśekhara* Text: *Karṇabhāram* - Page. 21 - 32 (Upto the end)
IV	Introduction to the dramatic works of *Viśākhadatta, Śūdraka, Bhaṭṭanārāyaṇa* and *Murāri* - Introduction to Allegorical dramas 1. *Prabodhacandrodaya* and 2. *Saṅkalpasūryodaya*
V	Introduction to *Campū* literature 1. *Bhojacampū* 2. *Viśvaguṇādarśacampū* and 3. *Nalacampū* Grammar – *Lṛṭ lakārāḥ* (Future tense) (i) गमिष्यति (*Gamiṣyati*) (ii) स्थास्यति (*Sthāsyati*) (iii) पठिष्यति (*Paṭhiṣyati*) (iv) नर्तिष्यति (*Nartiṣyati*) (v) कोपिष्यति (*Kopiṣyati*) (vi) कथयिष्यति (*Kathayiṣyati*) (vii) गणयिष्यति (*Gaṇayiṣyati*) (viii) भविष्यति (*Bhaviṣyati*) (ix) करिष्यति (*Kariṣyati*) (x) श्रोष्यति (*Śroṣyati*) Declensions: (*Sarvanāmaśabdāḥ*) - 1. तद् शब्दः (*Tad śabdaḥ*) in all genders 2. अस्मद् शब्दः (*Asmad śabdaḥ*) 3. युष्मद् शब्दः (*Yuṣmad śabdaḥ*)

Course Objectives	Understand the structure and use of different phrases and Idioms in Sanskrit Drama and grammatical aspects of *Karṇabhāram*	K2
	Enhance one's ability to converse freely in the language, which is considered to be a specialized skill as far as the Sanskrit Language goes	K2
	Draft and summarize the literary texts	K3
	Identify and apply different grammatical peculiarities	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṃskṛta-Sukhabodhinī - III* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	S	M	M	S	S
CO 2	S	S	S	S	S
CO 3	S	M	M	S	S
CO 4	S	S	M	S	S
CO 5	S	S	S	S	S

S-Strong   M-Medium   L-Low

7

UNIVERSITY OF MADRAS
UG & 5 YR INTEGRATED DEGREE – FOUNDATION COURSE
SYLLABUS WITH EFFECT FROM 2022-2023
EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024

200L4G

FOUNDATION COURSE: PART-I SANSKRIT PAPER-IV

Inst.Hrs. : 6   **Year : II**
Credits : 3   **Semester : IV**

Paper IV – Alankara, Didactic & Modern literatures and Translation

Course Outcome	1. Apply the usage of compound words 2. Differentiate the alankaras 3. Translate the prose passages prescribed 4. Identify and apply different grammatical tenses of "Mahabharata" related translation 5. Analyze and critically assess the literary texts
UNITS	
I	Introduction to Didactic literature (*Pañcatantram* and *Hitopadeśaḥ*) Text: The lion and the hare शशकसिंहकथा (*Śaśakasiṃhakathā*) from Pañcatantram and The jackal and the elephant शृगालहस्तिकथा (*Śṛgālahastikathā*) a story from *Mitralābhaḥ* of *Hitopadeśaḥ*
II	*Alaṅkārāḥ - i. Upamā, ii. Rūpakam, iii. Ullekhaḥ, iv. Utprekṣā and v. Vyatirekaḥ*
III	Introduction to Modern literature - Introduction to अर्थशास्त्रम् (*Artha śāstram*) of चाणक्यः (*Cāṇakyaḥ*) - Introduction to मयमतम् (*Mayamatam*) - Introduction to नीतिद्विषष्टिका (*Nītidviṣaṣṭhikā*) - *Slokās* - 1 to 10 - Introduction to the life history of श्रीआदिशङ्कराचार्यः (*Śrī -Ādiśaṅkarācāryaḥ*), श्रीरामानुजाचार्यः (*Śrī Rāmānujācāryaḥ*) and श्रीमध्वाचार्यः (*Śrī Madhvācāryaḥ*)
IV	Introduction to Modern literature in Sanskrit - Text: तिरुक्कुरळ् संस्कृतानुवादः(Sanskrit translation of Tirukkural) *Slokās* 1 to 10 ईश्वरवन्दनम् (*Kaḍavuḷ Vāzhththu*) by कलियन् रामानुजजीयर् (*Kaliyan Rāmānujajīyar*) नालडियार् (*Nālaḍiyār*) translated by श्री एस्. एन्. रामदेशिकः (*Śrī S. N Rāmadeśika*) - *Slokās*: 1 to 5
V	Translation from prose section Unit - I stories Grammar: Conjugation - *Loṭ lakārāḥ* (Imperative mood) (i) गच्छतु (*Gacchatu*) (ii) तिष्ठतु (*Tiṣṭhatu*) (iii) पठतु (*Paṭhatu*) (iv) शृणोतु (*Śṛṇotu*) (v) करोतु (*Karotu*)

8

Course Objectives	Demonstrate the usage of connecting words	K2
	Understand the alankaras which are used in devotional lyrics	K2
	Draft and summarize the literary texts	K3
	Identify the meaning, types of figure of speech of the prescribed text	K3
	Analyze and critically assess the literary texts	K4

Book recommended for Reference	*Kalāśālā-Saṁskṛta-Sukhabodhinī - IV* **To be Published by: University of Madras, Chennai - 5**

Mapping with Programme Outcomes:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	S	S
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	S	M	S	S	S
CO5	S	S	S	S	M

S-Strong   M-Medium   L-Low

9

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UNIVERSITY OF MADRAS

U.G. AND FIVE YEAR INTEGRATED PG DEGREE PROGRAMS

FOUNDATION COURSE: PART I – ARABIC

(EXISTING SYLLABUS (22-23) FOLLOWED FROM THE ACADEMIC YEAR 2023-2024)

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Programme:	**U.G. AND FIVE YEAR INTEGRATED P.G. DEGREE PROGRAMS** **FOUNDATION COURSE: PART I – ARABIC**
Programme Code:	BFC-LA23
Duration:	**4 Semesters**
On successful completion of this program, the graduates are expected to achieve the following:	
Programme Outcomes:	1. Acquire the knowledge of the structure of Arabic words 2. Acquaint with the knowledge of basic Arabic grammar 3. Become familiar with the knowledge of phonetic system of Arabic language 4. Able to communicate in Arabic 5. Have the knowledge of moral values in the light of Quran and Hadith
Programme Specific Outcomes:	1. Understand the sounds and phrasing of Arabic language. 2. Learn the basic Arabic grammar 3. Develop communication skills in Arabic 4. Acquire new vocabulary in Arabic 5. Learn the moral values of the Holy Quran and Sunnah

List of Courses:

Semester	Course Code	Title of the Course	Foundation Course	Credits
I	100L1H	Paper I : Prose	FC	3
II	100L2H	Paper II : Grammar	FC	3
III	200L3H	Paper III : Communication Skill in Arabic	FC	3
IV	200L4H	Paper IV : Quran and Hadith	FC	3

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170

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Course I	Course Code	Title of the Course	Credits
FC	100L1H	Paper I : Prose	3

Course Outcomes	1. Understand the correct pronunciation of Arabic letters
	2. Understand the structure-based composition.
	3. Acquire new vocabulary in Arabic
	4. Read the Arabic sentences without diacritical marks
	5. Able to write the simple sentences in Arabic without errors.
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar.
	2. Understand the structure of Arabic language.
	3. Employ sentence making.
	4. Enhance vocabulary.
	5. Improve reading and writing skills.

Units	
I	(دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم)
	من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثالث عشر
IV	من الدرس الرابع عشر إلى الدرس الثامن عشر
V	من الدرس التاسع عشر إلى الدرس الثالث والعشرين

2

Prescribed Text Book	دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم Duroos Al-Lugha Al-Arabiyya – Part I, By Dr. V. Abdur Rahim
Reading List (Print and online)	معجم الكلمات الواردة في دروس اللغة العربية لغير الناطقين بها مفتاح دروس اللغة العربية لغير الناطقين بها القراءة الراشدة — الشيخ أبو الحسن علي الحسني الندوي القراءة المفيدة — الدكتور محمد يوسف كوكن العمري منهاج العربية — السيد النبي حيدرآبادي www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

3

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course II	Course Code	Title of the Course	Credits
FC	100L2H	Paper II : Grammar	3

Course Outcomes	1. Able to use basic grammatical structure. 2. Develop reading skills and reading speed 3. Acquire new vocabulary in Arabic 4. Understand the different types of sentences. 5. Able to construct simple sentences in Arabic
Pre-requisites, if any:	Nil
Course Objectives	1. Understand basic Arabic grammar. 2. Understand the correct usage of Arabic grammar. 3. Employ sentence making. 4. Enhance vocabulary. 5. Improve reading and writing skills.
Units
I	(قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله) من الدرس الأول إلى الدرس الرابع
II	من الدرس الخامس إلى الدرس الثامن
III	من الدرس التاسع إلى الدرس الثاني عشر

4

IV	من الدرس الثالث عشر إلى السادس عشر
V	من الدرس السابع عشر إلى الدرس العشرين
Prescribed Text Book	قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله Basic Arabic Grammar, By Dr. Syed Rahmathullah
Reading List (Print and online)	النحو الواضح — علي الجارم ومصطفى أمين دليل النحو الواضح — الدكتور بشير أحمد جمالي سهل العوامل __ الدكتور تاج الدين المناني النحو الميسر للكبار والصغار — علي محمود عقيلي القواعد التطبيقية في اللغة العربية — الدكتور نديم دعكور www.alnahw.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

5

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	3	1

3-Strong   2-Medium   1-Low

Course III	Course Code	Title of the Course	Credits
FC	200L3H	Paper III : Communication Skill in Arabic	3
Course Outcomes		1. Understand the basics of Arabic language. 2. Learn the structure of Arabic words. 3. Familiarize with the phonetic system of Arabic. 4. Able to communicate in Arabic 5. Able to translate from Arabic to English and vice versa	
Pre-requisites, if any:	Nil		
Course Objectives		1. Understand the sounds and phrasing of Arabic language. 2. Acquire new vocabulary and apply in context. 3. Develop communication skills in Arabic. 4. Understand the different aspects of communication. 5. Learn to communicate in everyday interactions.	
Units			
I		(الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول — السعيد محمد بدوي وفتحي علي يونس) التعارف – في المطار (١)	
II		في الفندق – في المطعم	
III		في البنك – عند الطبيب (١)	

IV	في الطريق – في مكتب البريد
V	في السوق (١) – في السوق (٢)
Prescribed Text Book	الكتاب الأساسي في تعليم اللغة العربية لغير الناطقين بها، الجزء الأول – السعيد محمد بدوي وفتحي علي يونس
	Al Kitaab Al Asaasi Fi Taleem Al Lugha Al Arabiyya Li Ghair An Naatiqeena Biha - Part I, By Sayeed Muhaamad Badawi and Fathi Ali Yunus
Reading List (Print and online)	A Practice Book on Gulf Arabic, By Dr. Abdul Jaleel. T
	Arabic Conversation Book, By Mohd. Harun Rashid and Khalid Perwez
	A Hand book of Commercial Arabic by Dr. Aboobacker K.P
	العربية لغير العرب – د. مصطفى حسن الريس، الأزهر
	العربية للحياة – جامعة الملك سعود
	القراءة العربية لغير العرب – وزارة التربية بالكويت
	www.talkinarabic.com

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

7

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	3	3	3	2	1

3-Strong   2-Medium   1-Low

Course IV	Course Code	Title of the Course	Credits
FC	200L4H	Paper IV : Quran and Hadith	3

Course Outcome	1. Know the principal textual sources of the Islamic tradition: The Qur'an and the Hadith.
	2. Know the role of Quran and Hadith in the synthesis of Islamic faith and practice.
	3. Understand the structure of Arabic grammar through Quran and Hadith.
	4. Understand the methodology of translation of Quran and Hadith.
	5. Understand the moral values of Quran and Hadith
Pre-requisites, if any:	Nil
Course Objectives	1. Know the importance of Quran and Hadith.
	2. Understand the style of Quran and Hadith.
	3. Understand the role of Quran and Hadith in the Islamic faith and law.

8

	4. Know the structure of Arabic grammar through the examples from Quran and Hadith. 5. Learn the cultural and moral values.
Units	
I	(١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم) سورة لقمان من الآية ١ إلى الآية ١٠
II	من الآية ١١ إلى ٢٠
III	من الآية ٢١ إلى ٣٤
IV	أحاديث سهلة من الحديث ١ إلى الحديث ١٠
V	من الحديث ١١ إلى الحديث ٢٠
Prescribed Text Book	١. سورة لقمان من القرآن الكريم ٢. أحاديث سهلة للدكتور ف. عبد الرحيم 1) Sooratu Luqman 2) Ahadeeth Sahlah By Dr. V. Abdur Rahim
Reading List (Print and online)	Tafsir Al-Jalalain The Noble Quran, Dr. Muhammad Muhsin Khan and Muhammad Taqi-Ud-Dhin Al-Hilali الأربعون النووية نصوص من الحديث النبوي الشريف، الدكتور ف. عبد الرحيم

9

		شرح أحاديث سهلة، الدكتور ش. عبد المالك
	https://quran.com/	
	https://sunnah.com/nawawi40	

Method of Evaluation:

Internal Assessment	End Semester Examination	Total	Grade
25	75	100	

Methods of assessment:

Recall (K1) - Simple definitions, MCQ, Recall steps, Concept definitions

Understand/ Comprehend (K2) - MCQ, True/False, Short essays, Concept explanations, Short summary or overview

Application (K3) - Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain

Analyse (K4) - Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge

Evaluate (K5) - Longer essay/ Evaluation essay, Critique or justify with pros and cons

Create (K6) - Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations

Mapping with Programme Outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5
CO	1	2	3	3	3

3-Strong   2-Medium   1-Low

10

UNIVERSITY OF MADRAS
FOUNDATION COURSE: FRENCH
SYLLABUS WITH EFFECT FROM 2023-2024

UG & 5 Year PG Integrated – SEMESTER – IV
Foundation Course: Translation, Comprehension and Grammar - II

Course Outcomes	1. Apply connecting words (*cause, but, concession, condition, hypothèse, conséquence*) to improve the spoken as well as written communication skills 2. Differentiate the various past tenses in "*Les Temps du Passé*" and their unique usage 3. Summarize the literary texts 4. Identify and apply the different grammatical tenses of "*les temps du passé*" in sample exercises to practice 5. Critically assess the literary texts through an analysis of its themes, narrative techniques, characters and its cultural significance		
Course	Foundation Course in French	**Course Code**	**200L4K**
Title of the Course:	Translation, Comprehension and Grammar – II		
Credits:	3		
Pre-requisites, if any:	----		
Course Objectives	Demonstrate the usage of connecting words in a given text		K2
	Understand and differentiate the various types of past tenses in "*Les Temps du Passé*"		K2 and K4
	Summarize the literary texts after a thorough analysis		K2 and K4
	Identify and apply the different grammatical tenses of "*les temps du passé*"		K3
	Analyze and critically assess the literary texts with regard to the themes and literary techniques		K4 and K5

UNITS

I	*Estula* *Décadi et son grand-père* Le plus-que-parfait
II	*Une mauvaise nouvelle* *L'égoïste puni* Le passé simple
III	*La visite de la grand-mère* L'expression de la cause L'expression de la conséquence
IV	*Le Horla* L'expression du but L'expression de la concession
V	*Monsieur Friquet* *Le lévrier et le serpent* L'expression de la condition et de l'hypothèse
Prescribed Text	K. Madanagobalane & N.C. Mirakamal, *Le français par les textes*, Chennai, Samhita Publications – Goyal Publisher & Distributors Pvt Ltd, 2017

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	M	S	M	L	S	M	L	S	S	S	M	S	M
CO2	S	M	M	L	M	M	L	S	S	S	S	M	M
CO3	M	S	S	M	M	M	M	S	S	M	M	S	M
CO4	S	M	M	L	M	M	L	S	S	S	S	M	M
CO5	M	S	S	M	M	M	M	S	S	M	M	S	M

S-Strong   M-Medium   L-Low

SEMESTER IV

Title of the Paper : Translation, Comprehension and Grammar-II

Prescribed textbook: K.Madanagobalane & N.C.Mirakamal, *Le français par les textes*, Chennai, Samhita Publications-Goyal Publisher & Distributors Pvt Ltd, 2017

   The following texts from the prescribed textbook:
   - *Estula*
   - *Décadi et son grand-père*
   - *Une mauvaise nouvelle*
   - *L'égoïste puni*
   - *La visite de la grand-mère*
   - *Le Horla*
   - *Monsieur Friquet*
   - *Le lévrier et le serpent*

   The following grammar components are chosen from the prescribed textbook:
   - Le plus-que-parfait

2

- Le passé simple
- L'expression de la cause
- L'expression de la conséquence
- L'expression du but
- L'expression de la concession
- L'expression de la condition et de l'hypothèse

Paper setters to strictly adhere to the syllabus and ask questions only from the pages included in the syllabus. Questions should cover the entire syllabus.

QUESTION PAPER PATTERN

Time : 3 Hours   Maximum Marks : 75

Section A (10 x 2 = 20 Marks)
Answer any TEN questions
15 questions to be asked from the prescribed texts (name of the text might be included within brackets in the question)

Section B (5 x 5 = 25 Marks)
Answer any FIVE questions
8 Grammar exercises to be given from the prescribed textbook

Section C (3 x 10 = 30 Marks)
Answer any THREE
3 must be answered out of 5 topics (1 translation of a prescribed text, 1 translation of unknown text, 1 comprehension of unknown text, 2 summaries of the prescribed texts)

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UNIVERSITY OF MADRAS
FOUNDATION COURSE: ENGLISH
SYLLABUS WITH EFFECT FROM 2023-2024

SECOND YEAR - SEMESTER IV
PAPER II –GENERAL ENGLISH

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
200L4ZU	Part II	Y	Y	-	-	3	6	25	75	100

	Learning Objectives
LO1	To help learners imbibe goal-setting attitude.
LO2	To enable them to understand the value of integrity.
LO3	To help them deal with emotions.
LO4	To teach the learners to frame sentences using tenses.
LO5	To enhance reporting skills.

Unit No.	Unit Title & Text	No. of Periods for the Unit
I	**GOAL SETTING (UNICEF)** **Life Story** 1.1 From Chinese Cinderella – Adeline Yen Mah 1.2 Why I Write - George Orwell **Short Essay** 1.3 On Personal Mastery – Robin Sharma 1.4 On the Love of Life – William Hazlitt	20
II	**INTEGRITY** **Short Story** 2.1 The Taxi Driver – K.S. Duggal 2.2 Kabuliwala - Rabindranath Tagore 2.3 A Retrieved Reformation – O Henry **Extract from a play** 2.4 The Quality of Mercy (Trial Scene from the Merchant of Venice - Shakespeare)	20
III	**COPING WITH EMOTIONS** **Poem** 3.1 Pride – Dahlia Ravikovitch 3.2 Phenomenal Woman – Maya Angelou **Reader's Theatre** 3.3 The Giant's Wife A Tall Tale of Ireland – William Carleton 3.4 The Princess and the God : A Tale of Ancient India	20

IV	**Language Competency Sentences** 4.1 Simple Sentences 4.2 Compound Sentences 4.3 Complex Sentences **Direct and Indirect Speech**	15
V	**Report Writing** 5.1 Narrative Report 5.2 Newspaper Report **Drafting Speeches** 5.3 Welcome Address 5.4 Vote of Thanks	15

Course Outcomes

Course Outcomes	On completion of this course, students will	
CO1	Determine their goals	PO1,PO7
CO2	Identify the value of integrity.	PO1,PO2,PO10
CO3	Deal with emotions.	PO4,PO6,PO9
CO4	Frame grammatically correct sentences	PO4,PO5,PO6
CO5	Write cohesive reports.	PO3,PO8

Text Books (Latest Editions)

1	Oxford Practice Grammar , John Eastwood, Oxford University Press
2	Cambridge Grammar of English , Ronald Carter and Michael McCarthy
3.	George Orwell Essays, Penguin Classics

Web Resources

1	http:/www.gradesaver.com/George-orwell-essays/study/summary
2	O' Henry. A Retrieved Reformation. https://americanenglish.state.gov/files/ae/resource_files/a-retrieved-reformation.pdf
3	Maya Angelou. Phenomenal Woman. https://www.poetryfoundation.org/poems/48985/phenomenal-woman
4	The Quality of Mercy, https://poemana1ysis.com
5	https://www'.oxfordscho1ar1yeditions.coin/disp1ay/10.1093/actrade/9780199235742.book.1/actrade-9780199235742-div1-106- William Hazilitt

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	3	3	3	3	2	3	2
CO2	2	3	3	3	2	3	3	2	2	2
CO3	3	3	3	2	3	3	3	2	3	2
CO4	3	3	3	3	3	3	3	2	2	2
CO5	3	2	3	3	3	3	3	2	2	3

3 – Strong, 2 – Medium , 1 – Low

Mapping with Programme Specific Outcomes:

CO /PO	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3
Weightage	15	15	15	15
Weighted percentage of Course Contribution to Pos	3.0	3.0	3.0	3.0

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		**Semester: IV**
Data Structures and Algorithms		**225C4A**
Credits 5		**Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To impart the basic concepts of data structures and algorithms.
- To acquaint the student with the basics of the various data structures
- This course also gives insight into the various algorithm design techniques

Course Outcomes: (for students: To know what they are going to learn)
CO1: To introduce the concepts of Data structures and to understand simple linear data structures.
CO2: Learn the basics of stack data structure, its implementation and application
CO3: Use the appropriate data structure in context of solution of given problem and demonstrate a familiarity with major data structures.
CO4: To introduce the basic concepts of algorithms
CO5: To give clear idea on algorithmic design paradigms like Divide and conquer and Backtracking,

Units	Contents
I	**INTRODUCTION TO DATA STRUCTURES:** Data Structures: Definition- Time & Space Complexity - Arrays: Representation of arrays, Applications of arrays, sparse matrix and its representation - Linear list: Singly linked list implementation, insertion, deletion and searching operations on linear list - Circular linked list: implementation, Double linked list implementation, insertion, deletion and searching operations.
II	**STACKS and QUEUES:** Operations, array and linked representations of stack, stack applications, infix to postfix conversion, postfix expression evaluation - Queues: operations on queues, array and linked representations - Circular Queue: operations, applications of queues.
III	**TREES & GRAPHS:** **Trees:** Definitions and Concepts- Representation of binary tree, Binary tree traversals (Inorder, Postorder, preorder), Binary search trees in arrays– Heaps - AVL Trees – B Trees **Graphs:** Representation of Graphs- Types of graphs
IV	**INTRODUCTION TO ALGORITHMS:** Definition of Algorithms- Overview and importance of algorithms- pseudocode conventions, Asymptotic notations, practical complexities. **Graph Applications:** Breadth first traversal – Depth first traversal- -Single source shortest path – Minimal spanning trees – prim's and kruskal's algorithms
V	**DIVIDE AND CONQUER ALGORITHMS:** General Method – Binary Search- Quick Sort- Merge Sort. **BACKTRACKING:** General method, 8 Queens, Graph coloring, Hamiltonian cycle.

Learning Resources:

Recommended Texts

1. Ellis Horowitz , Sartaj Sahni, Susan Anderson Freed, Second Edition , "Fundamentals of Data in C", Universities Press
2. E. Horowitz, S. Sahni and S. Rajasekaran,   Second Edition ,"Fundamentals of Computer Algorithms " Universities Press

Reference Books

1. Seymour Lipschutz ,"Data Structures with C", First Edition, Schaum's outline series in computers, Tata McGraw Hill.
2. R.Krishnamoorthy and G.Indirani Kumaravel, Data Structures using C, Tata McGrawHill – 2008.
3. A.K.Sharma, Data Structures using C , Pearson Education India,2011.
4. G. Brassard and P. Bratley, "Fundamentals of Algorithms", PHI, New Delhi, 1997.
5. A.V. Aho, J.E. Hopcroft, J.D. Ullmann,, "The design and analysis of ComputerAlgorithms", Addison Wesley, Boston, 1974
6. Thomas H. Cormen, C.E. Leiserson, R L.Rivest and C. Stein, Introduction to Algorithms, Third edition, MIT Press, 2009
7. Sanjoy Dasgupta, C.Papadimitriou and U.Vazirani , Algorithms , Tata McGraw-Hill, 2008.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		Semester: IV
Data Structures and Algorithms Practical		**225C41**
Credits 5	**Lecture Hours:4 per week**	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand and implement basic data structures using Java
- To apply linear and non-linear data structures in problem solving.
- To learn to implement functions and recursive functions by means of data structures
- To implement searching and sorting algorithms

Course Outcomes: (for students: To know what they are going to learn)
CO1: Implement data structures using Java
CO2: Implement various types of linked lists and their applications
CO3: Implement Tree Traversals
CO4: Implement various algorithms in Java
CO5: Implement different sorting and searching algorithms

List of Programs

Implement the following exercises using Java Programming language:

1. Array implementation of stacks
2. Array implementation of Queues
3. Linked list implementation of stacks
4. Linked list implementation of Queues
5. Covert infix expression to postfix.
6. Binary Tree Traversals (Inorder, Preorder, Postorder)
7. Implementation of Linear search and binary search
8. Implementation Insertion sort, Quick sort and Merge Sort
9. Implementation of Depth-First Search & Breadth-First Search of Graphs.
10. Finding single source shortest path of a Graph.

Learning Resources:
Learning Resources:
Recommended Texts
1. Ellis Horowitz , Sartaj Sahni, Susan Anderson Freed, Second Edition , "Fundamentals of Data in C", Universities Press
2. E. Horowitz, S. Sahni and S. Rajasekaran,   Second Edition ,"Fundamentals of Computer Algorithms " Universities Press

Reference Books
1. Seymour Lipschutz ,"Data Structures with C", First Edition, Schaum's outline series in computers, Tata McGraw Hill.
2. R.Krishnamoorthy and G.Indirani Kumaravel, Data Structures using C, Tata McGrawHill – 2008.
3. A.K.Sharma, Data Structures using C , Pearson Education India,2011.
4. G. Brassard and P. Bratley, "Fundamentals of Algorithms", PHI, New Delhi, 1997.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Title of the Course	**MATHEMATICS – II** **(Common to B.Sc-Physics, Physics with CA, Chemistry, Computer Science, ECS, Data Science, Artificial Intelligence, Software Applications & BCA)**

Paper Number				**ELECTIVE COURSE IV**			
Category	Elective	**Year**	II	**Credits**	3	**Course Code**	225E4A
		Semester	IV				

Instructional Hours per week	**Lecture**	**Tutorial**	**Lab Practice**	**Total**
	4	1	--	5

Pre-requisite	12th Standard Mathematics

Objectives of the Course	• Necessary skills to analyze and make decision on Assignment and Transportation problems Simple Harmonic Motion • To solve real world problems on Sequencing and Network and its applications

	Unit I: Integral calculus: Bernouli's Formula, Reduction Formula $Sin^n\theta, Cos^n\theta, Sin^m\theta\ Cos^n\theta$ – Simple Problems. **Hours: 15**
	Unit II : Fourier Series: Fourier series for functions $(0, 2\pi), (-\pi ,\pi)$ **Chapter 4: Section : 4.1, 4.1.1** **Hours: 15**
	Unit III: **Differential Equations: Ordinary Differential Equations**: second order non- homogeneous differential equations with constant coefficients of the form ay" +by'+ cy = X where X is of the form cos and sin - Related problems only. **Partial Differential Equations**: Formation, complete integrals and general integrals, fourstandard types and solving Lagrange's linear equation P p +Q q= R. **Chapter 5: Section 5.2.1, Chapter 6: Section 6.1 to 6.4** **Hours: 15**
	Unit IV: **Laplace Transforms:** Laplace transformations of standard functions and simple properties, inverseLaplace transforms. **Chapter 7: Section 7.1.1 to 7.1.4 & 7.2 to 7.2.3** **Hours: 15**
	Unit V: Vector Differentiation: Introduction, Scalar point functions, Vector point functions, vector differential operator Gradient, Divergence, Curl, Solenoidal, irrotational, identities. **Chapter 8, Section 8.1 to 8.4.4** **Hours: 15**

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)	**Total Hours: 75** Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
Recommended Text	Allied Mathematics, Volume II by P. Duraipandian and S.Udayabaskaran, S. Chand Publications
Reference Books	1. Ancillary Mathematics by S. Narayanan and T.K. ManickavachagomPillay, S. Viswanathan Pinters, 1986, Chennai 2. Allied Mathematics by A. Singaravelu 3. Allied Mathematics by P.R. Vittal
Website and **e-Learning Source**	1. http://www.themathpaage.com 2. http://nptel.ac.in

Course Learning Outcome (for Mapping with POs and PSOs)

Students will be able to

CLO 1: Understand the various concepts of Bernoulli's and Reduction Formula.

CLO 2: Understand the concepts of Fourier Series

CLO 3: Understand the concepts of Non-Homogenous and Partial Differential Equations

CLO 4: Understand the Laplace Transforms

CLO 5: Understand the concepts of Vector Differentiation.

	Pos						PSOs		
	1	2	3	4	5	6	1	2	3
CLO 1	1	3	2	3	1	1	3	1	1
CLO 2	2	3	1	3	1	1	3	1	1
CLO 3	3	2	1	3	1	1	3	1	1
CLO 4	2	3	1	3	1	1	3	1	1
CLO 5	3	3	2	3	1	1	3	1	1

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II   **Semester: IV**

Elective: Statistics-II (Common to B.Sc.-CS, CS with AI, CS with DS, Software Appl. & BCA)	**225E4B**
Lecture Hours: 5 per week	**Credits:3**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

Course Objectives:
1. Understand Probability and its properties
2. Learn characteristics of different discrete and continuous distributions.
3. Know situation to which different distributions can be applied.
4. Comprehend the Sampling distributions.
5. Learn how to apply statistical tests to get information from data

Units	Contents
I	Basic concepts of Probability: Random Experiments, Sample space, Trial, Events, - Classical and empirical approach to probability and their limitations –Types of events: Exhaustive, mutually exclusive, equally likely and Independent events - Axiomatic approach to probability - Basic theorems on probability using axiomatic approach. Bayes Theorem (statement only)
II	Discrete probability mass function, cumulative distribution function- Theory and problems based on it. Bernoulli distribution, Binomial Distribution and Poisson Distribution
III	Continuous probability density function, cumulative distribution function - Theory and problems based on it. Normal Distribution and its properties, Standard Normal distribution, Problems based on it. Exponential Distribution
IV	Introduction of Sampling distributions- student's t and chi-square distributions, distribution of sample mean from normal distribution. Density function and Properties only.
V	Testing of Hypothesis, Single mean test and double means test based on normal distribution and students t-distribution. Proportion test, Chi-square test, ANOVA test.

Course Outcomes: Upon finishing point of this course, students will be able to

1. understand the basic concept of Probability

2. identify the characteristics of different discrete and continuous distributions.

3. identify the type of statistical situation to which different distributions can be applied comprehend the Sampling distributions.

4. understand how to apply statistical tests to get information from data.

Suggested Readings:

Books for study:

1. Gupta,S.CandKapoor,V.K(2002),*FundamentalsofMathematicalStatistics*,SultanChandandSons,NewDelhi.

2. GoonA.M.,GuptaM.K.andDasguptaB.(2002):*FundamentalsofStatistics*,Vol.I&II,8thEdn.TheWorldPress,Kolkata.

3. IrwinMiller,MaryleesMiller(2006):*JohnE.Freund'sMathematicalStatisticswithApplications*,(7thEdn.),PrenticeHallInternationalINC.

4. Mood,A.M.Graybill,F.A.andBoes,D.C.(2007):*IntroductiontotheTheoryofStatistics*,3rdEdn.,(Reprint),TataMcGraw-HillPub.Co.Ltd

Books for reference:

1.SaxenaH.C.:*ElementaryStatistics*.S.Chand&Co.,2009.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Elective Course:Physics-II (Theory) Common for B.Sc.-SA, B.Sc.-CSc , B.Sc.-CSc-wAI	225E4C

Credits: 2	Lecture Hours: 3 per week

Learning Objectives:
- This paper introduces the student to the basic concepts of current electricity, electronics and digital electronics

Course Outcomes:
CO1: Acquire knowledge on elementary ideas of electricity and magnetism
CO2: Emphasize the significance of laws involved in electric circuits
CO3: Understand the basics of operational amplifier
CO4: Apply the principles of electronics in day to life
CO5: Apply the characteristics of electronic devices in practical.

Units	Contents
I	**Current Electricity** Ohm's law – Law of resistance in series and parallel – Specific resistance – capacitors – capacitors in serial and parallel – Kirchoff's laws – Wheatstone's network – condition for balance Carey-Foster's bridge – measurement of resistance – measurement of specific resistance – determination of temperature coefficient of resistance – Potentiometer – calibration of Voltmeter.
II	**Electromagnetism** Electromagnetic Induction – Faraday's laws – Lenz law – Self Inductance – Mutual Inductance – Experimental Determination-Coefficient of Coupling A.C. Circuits – Mean value – RMS value – Peak value – LCR in series circuit – impedance – resonant frequency – sharpness of resonance.
III	**Atomic and Nuclear Physics** Bohr's atom model – radius energy – Atomic excitation – Ionization potential – Frank and Hertz Method – Nucleus – Nuclear properties – Mass defect – Binding energy. Radio isotopes – Uses of radio isotopes – Nuclear fusion and Nuclear fission – X-rays – Production – properties –Derivation of Bragg's law – uses of X-raysin industrial and medical fields.
IV	**Analog Electronics** Semiconductor – PN junction diode – Bridge rectifier – Zener diode – Regulated power supply. Transistor – Working of a transistor – Transistor characteristics: CE Configuration – current gain relationship between ☐ and ☐ – Transistor Characteristics – CE Configuration only – CE amplifier – feedback – Hartley oscillator – Colpitt's oscillator

V	**Digital Electronics**
	Number system – Decimal – Binary – Octal and Hexadecimal system – Double Dabble method – Binary addition, subtraction and multiplication– conversion of binary number to octal and hexadecimal numbers and vice versa.
	Logic gates – OR, AND, NOT, XOR, NAND and NOR gates – truth tables – Half adder and Full adder circuits – Laws and theorems of Boolean's algebra – De Morgan's theorems.

Learning Resources:
Recommended Texts
1. Electricity and Magnetism – R. Murugesan, S. Chand & co, 2001.
2. Modern Physics – R. Murugesan, S. Chand & co, 1998.
3. Basic Electronics – B.L. Theraja, S. Chand & co, 2003.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Elective Physics-I & II (Practicals) (Semester I & II) Common for B.Sc.-SA, B.Sc.-CSc , B.Sc.-CSc-wAI	**225E41**
Credits 2	**Lecture Hours: 2 + 2 = 4**

Learning Objectives:

- The students can acquire practical knowledge on the given experiments.

ELECTIVE PHYSICS-I & II – (PRACTICALS)
(Examination will be held at the end of even Semester - Any Fifteen Experiments)

1. Young's Modulus by Non-uniform bending using Pin and Microscope
2. Young's Modulus by Non-uniform bending using Optic lever–Scale and telescope
3. Rigidity modulus by Static torsion method.
4. Rigidity modulus by Torsional oscillations without mass
5. Surface tension and Interfacial Surface tension–Drop Weight method
6. Comparison of Viscosities of two liquids–Burette method
7. Specific heat Capacity of a liquid–Half time correction
8. Sonometer–Determination of a.c frequency
9. Newton's Rings-Radius of curvature
10. Air wedge–Thickness of aware.
11. Spectrometer–Grating–Wavelength of Mercury lines–Minimum deviation method
12. Potentiometer–Voltmeter Calibration
13. P.O. Box–Specific resistance
14. B.G.–Figure of Merit (table galvanometer)
15. Construction of AND, OR, NOT gates–using diodes and Transistor
16. Zener Diode–Characteristics
17. NAND gate as a universal gate

Note: Use of Digital Balance Permitted.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: II   **Semester: IV**

Emotional Intelligence	225S4A
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 2	**Lecture Hours: 2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To enable the students to understand the concepts of emotional intelligence
- To teach the students on aspects relating to personality Analysis Self-analysis, Positive and Negative traits

Course Outcomes: (for students: To know what they are going to learn)
1. After completion of subjects students understand and application of Emotional Intelligence.

Units	Contents
I	Introduction – Emotional Intelligence – Meaning, Benefits, *Importance of emotions – Self –awareness and competencies Psychological Needs, Emotional quotient Vs. IntelligenceQuotient.
II	Personality Analysis – Distinct Personality Type – Handwriting Analysis, color preference,listening, profile, self-esteem, *Will Power, Confidence.
III	Negative Traits – Anger Management – Negative Syndrome and Attitude - Negativethinking – Guilt Quotient Stress and Emotion, Adapting to Loneliness.
IV	Positive Traits – Humor and Happiness – Empathetic ability - Sensitivity profile – Empowered personality, Self – Empowerment.
V	Self-analysis: Psychological growth and adjustment - Personal Development Plan – Successful negotiator personal SWOT Analysis, Celebrating Life.

Reference Books:
1. Dr. Aparna Chattopadhyaym What's Your Emotional IQ, Pustak Mahal, May 2004.
2. Jill Dann, Hodder & Stoughton, Emotional Intelligence In a Week, 10 Edition, 2007.
3. Daniel Goleman, Emotional Intelligence: Why It can matter More than IQ.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: II		Semester: IV
Technical Writing		**225S4B**
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS		
Credits 2		**Lecture Hours: 2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- This course is designed to guide students towards rhetorical, professional, and compositional competencies necessary to ethically and effectively create and analyse technical documents and communication.
- Technical communication competency will be accomplished through a structured exploration of professional/technical contexts and through the production of several documents and projects typical to many forms of technical writing

Course Outcomes: (for students: To know what they are going to learn)
1. Students will learn to analyse communication-related problems and develop solutions through the composition of technical documents from a number of genres and within several settings (i.e., print, web, interactive software) and contexts (e.g., academic, corporate, non-profit, governmental).
2. Students will explore rhetorical and professional strategies in order to discover howto clearly identify and address audiences and stakeholders, organizational contexts, and ethical concerns in the act of communication

Units	Contents
I	What is technical writing?Difference between technical writing and other forms of writing. Qualities and qualifications of technical writers.
II	End products of technical writing.professionalsinvolved-projectmanager/editor,writers, graphic artists; liaison with product engineers/scientists and clients.
III	Roles and responsibilities of writers, editors/project managers.7 Cs of effective writing:Document formats – hard and soft copy versions designs.
IV	Principlesoftechnicalwriting;stylesintechnicalwriting;clarity,precision,coherenceand logical sequence in writing.
V	Stages of Technical writing. Document development process, Technical documentation, Planning, Tools, architecture, templates, content development, technical reviews, editorial reviews. Quality control.

Books for References
1. Technical writing style by – Dan Jones , Sam Dragga
2. Handbook of Technical writing by- Walter.E.ollu -1976
3. Technical Writing by- Serena Henning
4. Technical writing process by – Kieran Morgan and Sanja Spejic -2015
5. A guide to technical writing by – T.A. Rickard

UNIVERSITY OF MADRAS
U.G. DEGREE COURSE

ENVIRONMENTAL STUDIES PROGRAMME
ABILITY ENHANCEMENT COMPULSORYCOURSES
(AECC- Environmental Studies)
Syllabus with effect from the academic year 2018-2019
(i.e. for batch of candidates admitted to the course from the academic year 2017-18)

Credits: 2   II Year / III/IV Sem.

Unit 1: Introduction to Environmental Studies
- Multidisciplinary nature of environmental studies;
- Scope and importance; concept of sustainability and sustainable development.

Unit 2 : Ecosystem   (2 lectures)
- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem:
  Food chains, food webs and ecological succession, Case studies of the following ecosystem:
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystem (ponds, stream, lakes, rivers, ocean, estuaries)

Unit 3: Natural Resources : Renewable and Non – renewable Resources (6 lectures)
- Land resources and landuse change: Land degradation, soil erosion and desertification.
- Deforestation : Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water : Use and over –exploitation of surface and ground water, floods, droughts, conflicts over water   (international and inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4: Biodiversity and Conservation   (8 lecturers)
- Levels of biological diversity: genetics, species and ecosystem diversity, Biogeographic zones of India: Biodiversity patterns and global biodiversity hot spots
- India as a mega- biodiversity nation, Endangered and endemic species of India.
- Threats to biodiversity: Habitat loss, poaching of wildlife, man- wildlife conflicts, biological invasions; Conservations of biodiversity: In-situ and Ex-situ Conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5: Environmental Pollution   (8 lecturers)
- Environmental pollution: types, causes, effects and controls: Air, Water, soil and noise Pollution.
- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste
- Pollution case studies.

Unit 6: Environmental Policies & Practices (8 lecturers)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act, Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human Wildlife conflicts in Indian context.

Unit 7: Human Communities and the Environment   (7 lectures)

- Human population growth, impacts on environment, human health and welfare.
- Resettlement and rehabilitation of projects affected persons; case studies.
- Disaster management: floods, earthquake, cyclone and landslides.
- Environmental movements : Chipko, Silent Valley, Bishnois of Rajasthan.
- Environmental ethics : Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies(e.g. CNG Vehicles in Delhi)

Unit 8 : Field Work   (6 lectures)

- Visit to an area to document environmental assets: river / forest/ flora/ fauna etc.
- Visit to a local polluted site – Urban / Rural/ Industrial/ Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystem- pond, river, Delhi Ridge etc.
   (Equal to 5 Lectures)

Suggested Readings:

1. Carson , R. 2002.Slient Spring, Houghton Mifflin Harcourt.
2. Gadgil , M.,& Guha, R. 1993.This Fissured Land: An Ecological History of India. Univ.of California Press.
3. Glesson, B. and Low, N.(eds.)1999. Global Ethics and Environment, London, Routledge.
4. Gleick,P.H.1993.Water Crisis. Pacific Institute for Studies in Dev.,Environment & Security. Stockholm Env.Institute, Oxford Univ.Press.
5. Groom, Martha J., Gary K.Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates,2006.
6. Grumbine,R.Edward, and Pandit,M.K2013.Threats from India's Himalayas dams .Science,339:36-37
7. McCully,P.1996.Rivers no more :the environmental effects of dams(pp.29-64).Zed books.
8. McNeill,John R.2000.Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum,E.P.,Odum, H.T.& Andrees,J.1971.Fundamental of Ecology. Philadelphia Saunders.
10. Pepper,I.L.,Gerba,C.P & Brusseau,M.L.2011.Environmental and Pollution Science. Academic Press.
11. Rao,M.N.& Datta,A.K1987.Waste Water Treatment. Oxford and IBH Publishing Co.Pvt.Ltd.
12. Raven,P.H.,Hassenzahl,D.M & Berg,L.R.2012 Environment.8th edition. John Willey & sons.

13. Rosencranz, A., Divan,S.,& Noble, M.L.2001.Environmental law and policy in India. Tirupathi 1992.
14. Sengupta,R.2003.Ecology and Economics: An approach to sustainable development.OUP
15. Singh,J.S.,Singh,S.P and Gupta,S.R.2014.Ecology,Environmental Science and Conservation. S.Chand Publishing, New Delhi.
16. Sodhi,N.S.,Gibson,L.&Raven ,P.H(eds).2013.Conservation Biology :Voices from the Tropics. John Willey & Sons.
17. Thapar,V.1998.Land of the Tiger: A Natural History of the Indian Subcontinent.
18. Warren,C.E.1971.Biology and water Pollution Control. WB Saunders.
19. Willson,E.O.2006. The Creation: An appeal to save life on earth..New York: Norton.
20. World Commission on Environment and Development.1987.Our Common Future. Oxford University Press.

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UNIVERSITY OF MADRAS
U.G. DEGREE COURSE

PART – IV - VALUE EDUCATION

Common for all U.G. & Five Year Integrated Courses
(Effective from the Academic Year 2012 – 2013)

SYLLABUS

CREDITS: 2   **III YEAR / V SEM**

Objective: Value are socially accepted norms to e valuate objects, persons and situations that form part and parcel of sociality. A value system is a set of consistent values and measures. Knowledge of the values are inculcated through education. It contributes in forming true human being, who are able to face life and make it meaningful. There are different kinds of values like, ethical or moral values, doctrinal or ideological values, social values and aesthetic values. Values can be defined as broad preferences concerning appropriate courses of action or outcomes. As such, values reflect a person's sense of right and wrong or what "ought" to be. There are representative values like, "Equal rights for all", "Excellence deserves admiration". "People should be treated with respect and dignity". Values tend to influence attitudes and behavior and help to solve common human problems. Values are related to the norms of a culture.

UNIT I: Value education-its purpose and significance in the present world – Value system – The role of culture and civilization – Holistic living – balancing the outer and inner – Body, Mind and Intellectual level – Duties and responsibilities.

UNIT II: Salient values for life – Truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity, and inclusiveness, Self esteem and self confidence, punctuality – Time, task and resource management – Problem solving and decision making skills – Interpersonal and Intra personal relationship – Team work – Positive and creative thinking.

UNIT III: Human Rights – Universal Declaration of Human Rights – Human Rights violations – National Integration – Peace and non-violence – Dr.A P J Kalam's ten points for enlightened citizenship – Social Values and Welfare of the citizen – The role of media in value building.

UNIT IV: Environment and Ecological balance – interdependence of all beings – living and non-living. The binding of man and nature – Environment conservation and enrichment.

UNIT V: Social Evils – Corruption, Cyber crime, Terrorism – Alcoholism, Drug addiction – Dowry – Domestic violence – untouchability – female infanticide – atrocities against women – How to tackle them.

1

UNIVERSITY OF MADRAS
U.G. DEGREE COURSE

Books for Reference :

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003.

2. Chakravarthy, S.K: Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi, 1999.

3. Satchidananda, M.K: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991.

4. Das, M.S. & Gupta, V.K.: Social Values among Young adults: A changing Scenario, M.D. Publications, New Delhi, 1995.

5. Bandiste, D.D.: Humanist Values: A Source Book, B.R. Publishing Corporation, Delhi, 1999.

6. Ruhela, S.P.: Human Values and education, Sterling Publications, New Delhi, 1986.

7. Kaul, G.N.: Values and Education in Independent Indian, Associated Publishers, Mumbai, 1975.

8. NCERT, Education in Values, New Delhi, 1992.

9. Swami Budhananda (1983) How to Build Character A Primer : Rmakrishna Mission, New Delhi.

10. A Culture Heritage of India (4 Vols.), Bharatiya Vidya Bhuvan, Bombay, (Selected Chapters only)

11. For Life, For the future : Reserves and Remains – UNESCO Publication.

12. Values, A Vedanta Kesari Presentation, Sri Ramakrishna Math, Chennai, 1996.

13. Swami Vivekananda, Youth and Modern India, Ramakrishna Mission, Chennai.

14. Swami Vivekananda, Call to the Youth for Nation Building, Advaita Ashrama, Calcutta.

15. Awakening Indians to India, Chinmayananda Mission, 2003.

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UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

OPERATING SYSTEM Common for B.C.A. , B.Sc.-CSc		325C5A
Credits: 3		**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand the fundamental concepts and role of Operating System.
- To learn the Process Management and Scheduling Algorithms
- To understand the Memory Management policies
- To gain insight on I/O and File management techniques

Course Outcomes: (for students: To know what they are going to learn)
1. Understand the structure and functions of Operating System
2. Compare the performance of Scheduling Algorithms
3. Analyse resource management techniques

Units	Contents
I	Introduction: Views - Types of System - OS Structure – Operations - Services – Interface- System Calls - System Structure - System Design and Implementation. Process Management: Process – ProcessScheduling - Inter-process Communication. CPU Scheduling: CPU Schedulers - Scheduling Criteria -Scheduling Algorithms.
II	Process Synchronization: Critical- Section Problem - Synchronization Hardware Semaphores – ClassicalProblems of Synchronization - Monitors. Deadlocks: Characterization - Methods for Handling Deadlocks- Deadlock Prevention - Avoidance - Detection - Recovery.
III	Memory Management: Hardware - Address Binding – Address Space - Dynamic Loading and Linking - Swapping – Contiguous Allocation - Segmentation - Paging – Structure of the Page Table.
IV	Virtual Memory Management: Demand Paging - Page Replacement Algorithms - Thrashing. File System:File Concept -. Access Methods - Directory and Disk Structure - Protection - File System Structures -Allocation Methods - Free Space Management.
V	I/O Systems: Overview - I/O Hardware - Application I/O Interface - Kernel I/O Subsystem - Transforming 1/0 Requests to Hardware Operations - Performance. System Protection: Goals - Domain - Access matrix. System Security: The Security Problem - Threats – Encryption- User Authentication.

TEXT BOOK:
1. Abraham Silberschatz, Peter B Galvin, Greg Gagne, "Operating System Concepts", Wiley India Pvt. Ltd 2018, 9th Edition,.

REFERENCES:
1. William Stallings, "Operating Systems Internals and Design Principles", Pearson, 2018, 9th Edition.
2. Andrew S. Tanenbaum, Herbert Bos, "Modern Operating Systems", Pearson 2014, 4th Edition.

WEB REFERENCES:
NPTEL & MOOC courses titled Operating Systems ¬ https://nptel.ac.in/courses/106106144/

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Relational Database Management System Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc	325C5B
Credits 4	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- Gain a good understanding of the architecture and functioning of Database Management Systems
- Understand the use of Structured Query Language (SQL) and its syntax.
- Apply Normalization techniques to normalize a database.
- Understand the need of transaction processing and learn techniques for controlling theconsequences of concurrent data access.

Course Outcomes: (for students: To know what they are going to learn)
1. Describe basic concepts of database system
2. Design a Data model and Schemas in RDBMS
3. Competent in use of SQL
4. Analyse functional dependencies for designing robust Database

Units	Contents
I	Introduction to DBMS– Data and Information - Database – Database Management System – Objectives- Advantages – Components - Architecture. ER Model: Building blocks of ER Diagram –Relationship Degree – Classification – ER diagram to Tables – ISA relationship – Constraints –Aggregation and Composition – Advantages
II	Relational Model: CODD's Rule- Relational Data Model - Key - Integrity – Relational AlgebraOperations – Advantages and limitations – Relational Calculus – Domain Relational Calculus -QBE.
III	Structure of Relational Database. Introduction to Relational Database Design - Objectives – Tools –Redundancy and Data Anomaly – Functional Dependency - Normalization – 1NF – 2NF – 3NF –BCNF. Transaction Processing – Database Security.
IV	Introduction to SQL: Data Definition Commands – Data Manipulation Commands – SELECT Queries – Additional Data Definition Commands – Additional SELECT Query Keywords – Joining Database Tables.Advanced SQL:Relational SET Operators: UNION – UNION ALL – INTERSECT - MINUS.SQL Join Operators: Cross Join – Natural Join – Join USING Clause – JOIN ON Clause – Outer Join.
V	Sub Queries and Correlated Queries: WHERE – IN – HAVING – ANY and ALL – FROM. SQL Functions: Date and Time Function – Numeric Function – String Function – Conversion Function PL/SQL: Structure - Elements – Operators Precedence – Control Structure – Iterative Control -Cursors - Procedure - Function - Packages – Exceptional Handling - Triggers.

TEXT BOOK:

1. S. Sumathi, S. Esakkirajan, "Fundamentals of Relational Database Management System", Springer International Edition 2007.

REFERENCE BOOKS:

1. Abraham Silberchatz, Henry F. Korth, S. Sudarshan, "Database System Concepts",McGrawHill2019, 7th Edition.

2. Alexis Leon & Mathews Leon, "Fundamentals of DBMS", Vijay Nicole Publications 2014, 2ndEdition.

WEB REFERENCES:

NPTEL & MOOC courses titled Relational Database Management Systems

https://nptel.ac.in/courses/106106093/

https://nptel.ac.in/courses/106106095/

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		**Semester: V**
Operating System Practical		**325C51**
Credits: 5	**Lecture Hours:5 per week**	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To learn Process management and scheduling.
- To understand the concepts and implementation of memory management policies.
- To understand the various issues in Inter Process Communication

Course Outcomes: (for students: To know what they are going to learn)
1. Understand the process management policies and scheduling process by CPU.
2. Analyse the memory management and its allocation policies.
3. To evaluate the requirement for process synchronization.

List of Programs

1. Basic I/O programming.

To implement CPU Scheduling Algorithms:

2. Shortest Job First Algorithm.

3. First Come First Served Algorithm.

4. Round Robin and Priority Scheduling Algorithms.

5. To implement reader/writer problem using semaphore.

6. To implement Banker's algorithm for Deadlock avoidance.

Program for page replacement algorithms:

7. First In First Out Algorithm.

8. Least Recently Used Algorithm.

9. To implement first fit, best fit and worst fit algorithm for memory management.

10. Program for Inter-process Communication.

TEXT BOOK:
1. Abraham Silberschatz, Peter B Galvin, Greg Gagne, "Operating System Concepts", Wiley India Pvt. Ltd 2018, 9th Edition,.

REFERENCES:
1. William Stallings, "Operating Systems Internals and Design Principles", Pearson, 2018, 9th Edition.
2. Andrew S. Tanenbaum, Herbert Bos, "Modern Operating Systems", Pearson 2014, 4th Edition.

WEB REFERENCES:

NPTEL & MOOC courses titled Operating Systems ¬ https://nptel.ac.in/courses/106106144/

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		Semester: V
Relational Database Management System Practical Common for B.Sc.-SA , B.Sc.-CSc		**325C52**
Credits 4		**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- Learn the various DDL and DML commands
- Understand queries in SQL to retrieve information from data base
- Understand PL/SQL statements: Exception Handling, Cursors, and Triggers.
- Develop database applications using front-end and back-end tools.

Course Outcomes: (for students: To know what they are going to learn)
1. Implement the DDL, DML Commands and Constraints
2. Create, Update and query on the database.
3. Design and Implement simple project with Front End and Back End.

List of Programs
1) DDL commands with constraints.
2) DML Commands with constraints.
3) SQL Queries: Queries, sub queries, Aggregate function
4) PL/SQL : Exceptional Handling
5) PL/SQL : Cursor
6) PL/SQL : Trigger
7) PL/SQL : Packages
8) Design and Develop Application for Library Management
9) Design and Develop Application for Student Mark Sheet Processing
10) Design and Develop Application for Pay Roll Processing

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Computer Networks	**325E5A**
Common for B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 3	**Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand the concept of Data communication and Computer network
- To get a knowledge on routing algorithms.
- To impart knowledge about networking and inter networking devices
- To gain the knowledge on Security over Network communication

Course Outcomes: (for students: To know what they are going to learn)
CO1: To Understand the basics of Computer Network architecture, OSI and TCP/IP reference models
CO2: To gain knowledge on Telephone systems and Satellite communications
CO3: To impart the concept of Elementary data link protocols
CO4: To analyse the characteristics of Routing and Congestion control algorithms
CO5: To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS

Units	Contents
I	Introduction – Network Hardware – Software – Reference Models – OSI and TCP/IP Models – Example Networks: Internet, ATM, Ethernet and Wireless LANs - Physical Layer – Theoretical Basis for Data Communication - Guided Transmission Media
II	Wireless Transmission - Communication Satellites – Telephone System: Structure, Local Loop, Trunks and Multiplexing and Switching. Data Link Layer: Design Issues – Error Detection and Correction.
III	Elementary Data Link Protocols - Sliding Window Protocols – Data Link Layer in the Internet - Medium Access Layer – Channel Allocation Problem – Multiple Access Protocols – Bluetooth
IV	Network Layer - Design Issues - Routing Algorithms - Congestion Control Algorithms – IP Protocol – IP Addresses – Internet Control Protocols.
V	Transport Layer - Services - Connection Management - Addressing, Establishing and Releasing a Connection – Simple Transport Protocol – Internet Transport Protocols (ITP) - Network Security: Cryptography.

Learning Resources:

Recommended Texts
1. S. Tanenbaum, "Computer Networks", 4th Edition, Prentice-Hall of India, 2008.

Reference Books
1. B. A. Forouzan, "Data Communications and Networking", Tata McGraw Hill, 4th Edition, 2015.
2. F. Halsall, "Data Communications, Computer Networks and Open Systems", Pearson Education, 2008.
3. D. Bertsekas and R. Gallagher, "Data Networks", 2nd Edition, PHI, 2008.
4. Lamarca, "Communication Networks", Tata McGraw- Hill, 2002

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Mobile Ad-hoc Network	325E5B
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	

Credits 3	Lecture Hours: 4 per week

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To develop the skills to gain a basic understanding of neural network theory and fuzzy logic theory.
- To introduce students to artificial neural networks and fuzzy theory from a theoretical perspective

Course Outcomes: (for students: To know what they are going to learn)

CO1: Understand the basic concepts ad-hoc networks and ad-hoc mobility models.

CO2: Acquire knowledge about Medium access protocols and standards like IEEE 802.11a and HIPERLAN.

CO3: Identify the significance of Routing protocols and analyze about routing Algorithm.

CO4: Understand about the applications of end-end delivery and security issues in ad-hoc networks

CO5: Analyze and understand the concept of cross-layer design and parameter optimization techniques.

Units	Contents
I	Introduction: Introduction to ad-hoc networks – definition, characteristics features, applications. Characteristics of wireless channel, ad-hoc mobility models indoor and out-door models.
II	Medium Access Protocol: MAC Protocols: Design issues, goals and classification. Contention based protocols – with reservation, scheduling algorithms, protocols using directional antennas. IEEE standards: 802.11a, 802.11b, 802.11g, 802.15. HIPERLAN.
III	Network Protocols : : Routing Protocols: Design issues, goals and classification. Proactive Vs reactive routing, unicast routing algorithms, Multicast routing algorithms, hybrid routing algorithm, energy aware routing algorithm, hierarchical routing, QoS aware routing.
IV	End – end delivery and security: Transport Layer: Issues in designing – Transport layer classification, ad-hoc transport protocols. Security issues in ad-hoc networks: issues and challenges, network security attacks, secure routing protocols.
V	CROSS -LAYER DESIGN: Need for cross layer design, cross layer optimization, parameter optimization techniques, cross layer cautionary perspective. Integration of ad-hoc with Mobile IP networks.

Learning Resources:

Recommended Texts
1. C. Siva Ram Murthy and B. S. Manoj, Ad hoc Wireless Networks Architecture and Protocols II edition, Pearson Edition, 2007.

2. Charles E. Perkins, Ad hoc Networking, Addison – Wesley, 2000.

Reference Books
1. Stefano Basagni, Marco Conti, Silvia Giordano and Ivan stojmenovic, Mobile ad-
2. hoc networking, Wiley-IEEE press, 2004.
3. Mohammad Ilyas, The handbook of ad-hoc wireless networks, CRC press, 2002.
4. T. Camp, J. Boleng, and V. Davies "A Survey of Mobility Models for Ad-hoc Network"
5. Research, "Wireless Commn. and Mobile Comp - Special Issue on Mobile Ad-
6. hoc networking Research, Trends and Applications", Vol. 2, no. 5, 2002, pp. 483 – 502.
7. A survey of integrating IP mobility protocols and Mobile Ad-hoc networks, Fekri
8. M. bduljalil and Shrikant K. Bodhe, IEEE communication Survey and tutorials, no:12007.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Data Mining and Warehousing	**325E5C**
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 3	**Lecture Hours: 4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To provide the knowledge on Data Mining and Warehousing concepts and techniques.
- To study the basic concepts of cluster analysis
- To study a set of typical clustering methodologies, algorithms, and applications

Course Outcomes: (for students: To know what they are going to learn)
CO1: To understand the basic concepts and the functionality of the various data mining and data warehousing component
CO2: To know the concepts of Data mining system architectures
CO3: To analyse the principles of association rules
CO4: To get analytical idea on Classification and prediction methods.
CO5: To Gain knowledge on Cluster analysis and its methods.

Units	Contents
I	Introduction: Data mining – Functionalities – Classification – Introduction to Data Warehousing – Data Pre-processing: Pre-processing the Data – Data cleaning – Data Integration and Transformation – Data Reduction
II	Data Mining, Primitives, Languages and System Architecture: Data Mining – Primitives – Data Mining Query Language, Architecture of Data mining Systems. Concept Description, Characterization and Comparison: Concept Description, Data Generalization and Summarization, Analytical Characterization, Mining Class Comparison – Statistical Measures
III	Mining Association Rules: Basic Concepts – Single Dimensional Boolean Association Rules From Transaction Databases, Multilevel Association Rules from transaction databases – Multi dimension Association Rules from Relational Database and Data Warehouses
IV	Classification and Prediction: Introduction – Issues – Decision Tree Induction – Bayesian Classification – Classification of Back Propagation. Classification based on ConceptsfromAssociationRuleMining–OtherMethods. Prediction – Introduction – Classifier Accuracy.
V	Cluster Analysis: Introduction – Types of Data in Cluster Analysis, Petitioning Methods – Hierarchical Methods-Density Based Methods – GRID Based Method – Model based Clustering Method

Learning Resources:

Recommended Texts

   1. Han and   M. Kamber, "Data Mining Concepts and Techniques", 2001, Harcourt India Pvt. Ltd, New Delhi.

Reference Books

   1. K.P. Soman, Shyam Diwakar, V. Ajay "Insight into Data Mining Theory and Practice ",Prentice Hall of India Pvt. Ltd, New Delhi

   2. Parteek Bhatia, 'Data Mining and Data Warehousing: Principles and Practical Techniques',Cambridge University Press, 2019

Web resources: Web resources from NDL Library, E-content from open-source libraries

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		Semester: V
Software Engineering Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS		**325E5D**
Credits 3		**Lecture Hours: 4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To introduce the software development life cycles
- To introduce concepts related to structured and objected oriented analysis & design co
- To provide an insight into UML and software testing techniques

Course Outcomes: (for students: To know what they are going to learn)
1. The students should be able to specify software requirements, design the software using tools
2. To write test cases using different testing techniques.

Units	Contents
I	Introduction – Evolution – Software Development projects – Emergence of Software Engineering.Software Life cycle models – Waterfall model – Rapid Application Development – Agile Model – SpiralModel
II	Requirement Analysis and Specification – Gathering and Analysis – SRS – Formal System Specification
III	Software Design – Overview – Characteristics – Cohesion & Coupling – Layered design – Approaches Function Oriented Design – Structured Analysis – DFD – Structured Design – Detailed design
IV	Object Modeling using UML – OO concepts – UML – Diagrams – Use case, Class, Interaction, Activity, State Chart – Postscript
V	Coding & Testing – coding – Review – Documentation – Testing – Black-box, White-box, Integration, OO Testing, Smoke testing.

TEXT BOOK:
1. Rajib Mall, "Fundamentals of Software Engineering", PHI 2018, 5th Edition.
REFERENCE BOOKS:
1. Roger S. Pressman, "Software Engineering - A Practitioner's Approach", McGraw Hill 2010, 7thEdition.
2. Pankaj Jalote, "An Integrated Approach to Software Engineering", Narosa Publishing House 2011,3rd Edition.
WEB REFERENCES:
NPTEL online course – Software Engineering - https://nptel.ac.in/courses/106105182/

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Software Testing	325E5E
Credits 3	**Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- Adapt to various test processes, types of errors and fault models and methods of test generation from requirements for continuous quality improvement of the software system along with Software Quality best practices usage.
- Apply software testing cycle in relation to software development and projectmanagement focusing incidents and risks management within a project towardsefficient delivery of software solutions and implement improvements in thesoftware development processes by making use of standards and baselines.

Course Outcomes: (for students: To know what they are going to learn)
CO1. Select and classify measurement scales and models, software metrics andmeasures addressing software quality and reliability.
CO2. Conduct unit and integration tests by determining test design, test automation, testcoverage criteria using testing frameworks and test adequacy assessment usingcontrol flow, data flow, and program mutations.
CO3. Apply suitable higher order testing techniques and methods in order to achieveverified and validated software by following testing best practices.
CO4. Demonstrate the skillset as a tester to neutralize the consequences of wickedproblems by narrating effective test cases and test procedures.

Units	Contents
I	Principles of Testing: Testing Concepts: Purpose of Software Testing, Testing Principles, Goals of Testing, Testing aspects: Requirements, Test Scenarios, Test cases,Test scripts/procedures, Strategies for Software Testing, Testing Activities, Mistakes,Faults & Failures, Planning for Verification and Validation, Software Inspections,Automated Static Analysis, Verification and Formal Methods, Levels of Testing
II	White-Box Testing: Test Adequacy Criteria, Static Testing, Structural Testing, Code Complexity Testing, Mutation Testing, Data Flow Testing - Black-Box Testing: Test Case Design Criteria, Requirement Based Testing, Positive andNegative Testing, Boundary Value Analysis, Equivalence Partitioning State BasedTesting, Domain Testing - Functional Testing: Test Plan, Test Management, Test Execution and Reporting, TestSpecialist Skills, Tester's Workbench and Tool Categories, Test Maturity Model and TestProcess Assessment,
III	Debugging & Root Cause Analysis, Software Items, Component &Units, Test Bed, Traceability and Testability, Attributes of Testable Requirements, TestMatrix, Types of Testing Documentation, Verification Testing, Validation Testing,Integration Testing, System and Acceptance Testing, GUI Testing,Regression Testing,Selection, Minimization and Prioritization of Test Cases for Regression Testing

IV	CreatingTest Cases from Requirements and Use cases, Software Defects: Origins of Defects,Defect Classes, Defect Repository / Test Design, Defect Repository Higher Order Testing: Object Oriented Testing, Specification Based Testing,Performance Testing, Ad-hoc Testing, Usability and Accessibility Testing, Risk-basedTesting, Exploratory Testing, Scenario-based Testing, Random Testing CompatibilityTesting,
V	User Documentation Testing, Client–Server System Testing, RAD Testing,Configuration Testing, Testing internal Controls, Multiplatform Environment Testing, Security Testing, Web-based System Testing, Reliability Testing, Efficiency Testing, Maintainability Testing, Portability Testing, Introduction to Performance Testing, Application Performance Testing, Process of Performance Testing, Effective Root-Causeanalysis, Testing VS Test Automation, Tool evaluation and selection, Automation teamroles, Architectures, Planning and implementing test automation process

Books for References

1. KshirasagarNaik, PriyadarshiTripathy, Software Testing and Quality Assurance-Theoryand Practice, John Wiley & Sons, Inc., 2008, ISBN 978-0-471-78911-6
2. Fenton, Pfleeger, "Software Metrics: A Rigourous and practical Approach", ThomsonBrooks/Cole, ISBN 981-240-385-X.
3. Desikan, Ramesh, "Software Testing: principles and Practices", Pearson Education,ISBN 81-7758-121-X.
4. Anne MetteJonassen Hass, Guide to Advanced Software Testing, ARTECH HOUSE,INC., 2008, ISBN-13: 978-1-59693-285-2
5. Ian Molyneaux,The Art of Application Performance Testing, O'Reilly Media, Inc., 2009,ISBN: 978-0-596-52066-3
6. Jamie L. Mitchell, Rex Black, Advanced Software Testing—Vol. 3, 2nd Edition, RockyNook, 2015, ISBN: 978-1-937538-64-4
7. G. Gordon Schulmeyer, Handbook of Software Quality Assurance Fourth Edition,ARTECH HOUSE, INC., 2008, ISBN-13: 978-1-59693-186-2

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: V**

Digital Image Processing	325E5F
Credits 3	**Lecture Hours:4 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand the sensing, acquisition and storage of digital images.
- To study the image fundamentals and mathematical transforms necessary for image processing.
- To understand the digital processing systems and corresponding terminology.
- To understand the base image transformation domains and methods.
- To have an understanding of colour models, type of image representations and related statistics.
- To study the image enhancement techniques, image compression procedures.
- To study image segmentation and representation techniques, image restoration.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Be able to understand basic concepts image processing, image storage and types of transformations that can be applied to images.
CO2: Be able to compare the domains and methods of image processing.
CO3: Be able to check the correctness of algorithms using inductive proofs and loop invariants.
CO4: Learn Image Restoration & Enhancement techniques, colour image processing

Units	Contents
I	**Introduction to Computer Graphics:** Introduction of Coordinate representation and Pixel - Raster Scan & Random Scan systems - Video controller and raster scan display processor.
II	**Introduction to image processing:** Fundamentals - Applications - Image processing system components - Image sensing and acquisition - Sampling and quantization - Neighbours of pixel adjacency connectivity -regions and boundaries - Distance measures.
III	**Image Enhancement:** Frequency and Spatial Domain - Contrast Stretching - Histogram Equalization - Low pass and High pass filtering. **Image Restoration:** Noise models - mean, order—statistics - adaptive filters - Band reject, Band pass and notch filters
IV	**Colour Image Processing:** Colour models - Pseudo colour Image processing - Colour transformation and segmentation. **Image Compression:** Fundamentals – Models - Error free and lossy compression Standards.
V	**Morphological Image Processing: Overview** Boundary extraction - Region filtering - Connected component extraction - convex hull - Thinning; Thickening; skeletons; pruning; Image segmentation.

Text Book:
1. Digital Image Processing, Second Edition by Rafel C. Gonzalez and Richard E.   Woods, Pearson Education

Reference books:

1. Digital Image Processing by Bhabatosh Chanda and Dwijesh Majumder, PHI
2. Fundamentals of Digital Image Processing by Anil K Jain, PHI

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		Semester: VI
Programming in ASP.NET		**325C6A**
Common for B.Sc.-SA , B.Sc.-CSc		
Credits 4		**Lecture Hours:6 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To develop ASP.NET Web application using standard controls.
- To create rich database applications using ADO.NET.
- To implement file handling operations.
- To utilize ASP.NET security features for authenticating the web site.
- To handles SQL Server Database using ADO.NET.

Course Outcomes: (for students: To know what they are going to learn)
CO1: To identify and understand the goals and objectives of the .NET framework and ASP.NET with C# language.
CO2: To develop web application using various controls
CO3: To analyse C# programming techniques in developing web applications.
CO4: To assess a Web application using Microsoft ADO.NET.
CO5: To develop a software to solve real-world problems using ASP.NET

Units	Contents
I	Overview of .NET framework: Common Language Runtime (CLR), Framework Class Library- C# Fundamentals: Primitive types and Variables – Operators - Conditional statements -Looping statements – Creating and using Objects – Arrays – Stringoperations.
II	Introduction to ASP.NET - IDE-Languages supported Components -Working with Web Forms – Web form standard controls: Properties and its events – HTML controls -List Controls: Properties and its events.
III	Rich Controls: Properties and its events – validation controls: Properties and its events– File Stream classes - File Modes – File Share – Reading and Writing to files – Creating, Moving, Copying and Deleting files – File uploading
IV	ADO.NET Overview – Database Connections – Commands – Data Reader - Data Adapter - Data Sets - Data Controls and its Properties - Data Binding
V	Grid View control: Deleting, editing, Sorting and Paging. XML classes – Web form to manipulate XML files - Website Security - Authentication - Authorization – Creating a Web application

Recommended Texts
1. SvetlinNakov,VeselinKolev& Co, Fundamentals of Computer Programming with C#,Faber publication, 2019.
2. Mathew, Mac Donald, The Complete Reference ASP.NET, Tata McGraw-Hill ,2015.

Reference Books
1. Herbert Schildt, The Complete Reference C#.NET, Tata McGraw-Hill,2015.
2. Kogent Learning Solutions, C# 2012 Programming Covers .NET 4.5 Black Book, Dreamtech pres,2013.
3. Anne Boehm, Joel Murach, Murach's C# 2015, Mike Murach& Associates Inc. 2016.
4. DenielleOtey, Michael Otey, ADO.NET: The Complete reference, McGraw Hill,2008.
5. Matthew MacDonald, Beginning ASP.NET 4 in C# 2010, APRESS,2010.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		Semester: VI
Programming in ASP.NET Practical Common for B.Sc.-SA , B.Sc.-CSc		**325C61**
Credits 4		**Lecture Hours:6 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To develop ASP.NET Web application using standard controls.
- To create rich database applications using ADO.NET.
- To implement file handling operations.
- To utilize ASP.NET security features for authenticating the web site.
- To handles SQL Server Database using ADO.NET.

Course Outcomes: (for students: To know what they are going to learn)
CO1: To identify and understand the goals and objectives of the .NET framework and ASP.NET with C# language.
CO2: To develop web application using various controls.
CO3: To analyse C# programming techniques in developing web applications
CO4: To assess a Web application using Microsoft ADO.NET.
CO5: To develop a software to solve real-world problems using ASP.NET

List of Programs

1. Create an exposure of Web applications and tools
2. Implement the Html Controls
3. Implement the Server Controls
4. Web application using Web controls.
5. Web application using List controls.
6. Web Page design using Rich control. Validate user input using Validation controls. Working with File concepts
7. Web application using Data Controls.
8. Data binding with Web controls
9. Data binding with Data Controls.
10. Database application to perform insert, update and delete operations.
11. Database application using Data Controls to perform insert, delete, edit, paging and sorting operation.
12. Implement the Xml classes.
13. Implement Authentication – Authorization.
14. Ticket reservation using ASP.NET controls.

Recommended Texts
1. SvetlinNakov,VeselinKolev& Co, Fundamentals of Computer Programming with C#,Faber publication, 2019.
2. Mathew, Mac Donald, The Complete Reference ASP.NET, Tata McGraw-Hill ,2015.

Reference Books
1. Herbert Schildt, The Complete Reference C#.NET, Tata McGraw-Hill,2015.
2. Kogent Learning Solutions, C# 2012 Programming Covers .NET 4.5 Black Book, Dreamtech pres,2013.
3. Anne Boehm, Joel Murach, Murach's C# 2015, Mike Murach& Associates Inc. 2016.

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: III		Semester: VI
Project with Viva Voce Common for B.Sc.-SA , B.Sc.-CSc		**325C62**
Credits 4	**Lecture Hours: 6 per week**	

OBJECTIVES:

The aim of the mini project is that the student has to understand the real time software development environment. The student should gain a thorough knowledge in the problem, he/she has selected and the language / software, he/she is using.

Project planning:

B.Sc (Computer Science / Software Application)/BCA Major Project is an involved exercise, which has to be planned well in advance. The topic should be chosen in the beginning of final year itself. Related reading training and discussions of first internal project viva voce should be completed in the first term of final year.

I. Selection of the project work Project work could be of three types.

a) Developing solution for real life problem

In this case a requirement for developing a computer-based solution already exists and the different stages of system development life cycle is to be implemented successfully. Examples are accounting software for particular organization, computerization of administrative function of an organization, web based commerce etc.

b) System Software Project

Projects based on system level implementation. An example is a Tamil language editor with spell checker, compiler design.

b) Research level project

These are projects which involve research and development and may not be as a structured and clear cut as in the above case. Examples are Tamil character recognition, neural net based speech recognizer etc. This type of projects provides more challenging opportunities to students.

II Selection of team

To meet the stated objectives, it is imperative that major project is done through a team effort. Though it would be ideal to select the team members at random and this should be strongly recommended, due to practical consideration students may also be given the choice of forming themselves into teams with three members. A team leader shall be selected. Team shall maintain the minutes of meeting of the team members and ensure that tasks have been assigned to every team member in writing. Team meeting minutes shall form a part of the project report. Even if students are doing project as groups, each one must independently take different modules of the work and must submit the report.

III Selection of Tools

No restrictions shall be placed on the students in the choice of platform/tools/languages to be utilized for their project work, though open source is strongly recommended, wherever possible. No value shall be placed on the use of tools in the evaluation of the project.

IV Project management

Head of the Department / Principal of the college should publish the list of student's project topic, internal guide and external organization and teams agreed before the end of July. Changes in this list may be permitted for valid reasons and shall be considered favorably by the Head of the department / Principal of the college any time before commencement of the project. Students should submit a fortnightly report of the progress, which could be indication of percentage of completion of the project work. The students should ideally keep a daily activity book. Team meeting should be documented and same should be submitted at the end of the project work.

V   Documentation

Three copies of the project report must be submitted by each student (one for department library, one for the organization where the project is done and one for the student himself/herself). The final outer dimensions of the project report shall be 21cm X 30 cm. The color of the flap cover shall be light blue. Only hard binding should be done. The text of the report should be set in 12 pt, Times New Roman, 1.5 spaced.

Headings should be set as follows: CHAPTER HEADINGS 16 pt, Arial, Bold, All caps, Centered.

1. Section Headings 14 pt Bookman old style, Bold, Left adjusted.

1.1 Section Sub-heading 12 pt, Bookman old style.

Title of figures tables etc are done in 12 point, Times New Roman, Italics, centered.

Content of the Project should be relevant and specify particularly with reference to the work. The report should contain the requirement specification of the work, Analysis, Design, Coding, testing and Implementation strategies done.

• Organizational overview (of the client organization, where applicable)

• Description of the present system

• Limitations of the present system

• The Proposed system - Its advantages and features

• Context diagram of the proposed system

• Top level DFD of the proposed system with at least one additional level of expansion

• Program List (Sample code of major functions used)

• Files or tables (for DBMS projects) list. List of fields or attributes (for DBMS projects) in each file or table.

• Program – File table that shows the files/tables used by each program and the files are read, written to, updated, queried or reports were produced from them.

• Screen layouts for each data entry screen.

• Report formats for each report.

Some general guidelines on documentation are:

1. Certificate should be in the format: "Certified that this report titled………………………is a bonafide record of the project work done by Sri/ Kum ………………………under our supervision and guidance, towards partial fulfillment of the requirement for award of the Degree of B.Sc Computer Science/BCA/BSc Software Applications of XXX College" with dated signature of internal guide, external guide and also Head of the Department/ College.

2. If the project is done in an external organization, another certificate on the letterhead of the organization is required: "Certified that his/her report titled …………………………….is a bonafide record of the project work done by Sri/Kum…………….under my supervision and guidance, at the ……………..department of……………………… (Organization) towards partial fulfillment of the requirement for the award of the Degree of B.Sc (Computer Science/Software Applications) / BCA of XXX College.

3. Page numbers shall be set at right hand bottom, paragraph indent shall be set as 3.

4. Only 1.5 space need be left above a section or subsection heading and no space may be left after them.

5. References shall be IEEE format (see any IEEE magazine for detail) While doing the project keep note of all books you refer, in the correct format and include them in alphabetical order in your reference list.

VI Project Evaluation:

Internal Assessment

There shall be six components that will be considered in assessing a project work with weightage as indicated.

1. Timely completion of assigned tasks as evidenced by team meeting minutes 20%
2. Individual involvement, team work and adoption of industry work culture 10%
3. Quality of project documentation (Precision, stylistics etc) 10%
4. Achievement of project deliverables 20%
5 Effective technical presentation of project work 10%
6. Viva 30%

Based on the above 6 components internal mark 40 can be awarded.

External Assessment

Dissertation/Project submitted at the end of third year shall be valued by two examiners appointed by the Controller for the conduct of practical exam. The board of examiners shall award 60 marks based on the following components.

1. Achievement of project deliverables   - 20 Marks
2. Effective technical presentation of project work   - 20 Marks
3. Project Viva   - 20 Marks

There shall be a common written examination conducted for all the candidates in each group together for a minimum of 10 minutes.

(i)   Requirement Specification of Project
(ii)   Design of Project
(iii) Testing and Implementation of Project

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Artificial Intelligence	325E6A
Credits 3	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To Acquire Knowledge on various AI Techniques and Expert Systems
- To have enriched knowledge regarding heuristic search, Knowledge representation and Expert systems

Course Outcomes: (for students: To know what they are going to learn)
CO1: Develop an understanding of modern concepts in AI and where they can be used
CO2: Design, implement and apply novel AI techniques based on emerging real-world requirements
CO3: Develop an understanding of where and how AI can be used.

Units	Contents
I	Introduction–Definition – Future of Artificial Intelligence – Characteristics of Intelligent Agents–Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.
II	Problem solving Methods – Search Strategies- Uninformed – Informed – Heuristics – Local Search Algorithms and Optimization Problems -Searching with Partial Observations – Constraint Satisfaction Problems – Constraint Propagation – Backtracking Search – Game Playing – Optimal Decisions in Games – Alpha – Beta Pruning – Stochastic Games
III	Knowledge Representation First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation –Categories and Objects – Events – Mental Events and Mental Objects – Reasoning Systems for Categories -Reasoning with Default Information
IV	Software Agents Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.
V	Representing knowledge using rules: Procedural Vs Declarative knowledge – Logic programming – Forward Vs Backward reasoning – Matching – Control knowledge Brief explanation of Expert Systems- Definition- Characteristics-architecture- Knowledge Engineering- Expert System Life Cycle-Knowledge Acquisition Strategies- Expert System Tools.

Learning Resources:

Recommended Texts

1. Elaine Rich and Kevin Knight, Shiva Shankar Nair, "Artificial Intelligence", McGraw-Hill Companies, 3rd edition.

Reference Books

1. Stuart Russell & Peter Norvig , *Artificial Intelligence A Modern Approach*", Perason, 2nd Edition.
2. George F Luger , *Artificial Intelligence"*, Pearson 2002, 4th Edition.
3. V S Janaki Raman, K Sarukesi, P Gopalakrishnan, "*Foundations of Artificial Intelligent and Expert Systems*", MacMillan India limited.

Web resources

1. NPTEL & MOOC courses titled Artificial Intelligence and Expert Systems
2. https://nptel.ac.in/courses/106106140/
3. https://nptel.ac.in/courses/106106126/

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Introduction To Data Science Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc	325E6B
Credits 3	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- An understanding of the data operations
- An overview of simple statistical models and the basics of machine learning techniques of regression.
- An understanding good practices of data science
- Skills in the use of tools such as python, IDE
- Understanding of the basics of the Supervised learning

Course Outcomes: (for students: To know what they are going to learn)
1. Clean and reshape messy datasets
2. Use exploratory tools such as clustering and visualization tools to analyze data
3. Perform linear regression analysis
4. Use methods such as logistic regression, nearest neighbours, decision trees, support vector machines, and neural networks to build a classifier
5. Apply dimensionality reduction tools such as principal component analysis

Units	Contents
I	Introduction: Introduction to Data Science – Evolution of Data Science – Data Science Roles – Stages in aData Science Project – Applications of Data Science in various fields – Data Security Issues.
II	Data Collection and Data Pre-Processing: Data Collection Strategies – Data Pre-Processing Overview – Data Cleaning – DataIntegration and Transformation – Data Reduction – Data Discretization.
III	Exploratory Data Analytics: Descriptive Statistics – Mean, Standard Deviation, Skewness and Kurtosis – Box Plots –Pivot Table – Heat Map – Correlation Statistics – ANOVA.
IV	Model Development: Simple and Multiple Regression – Model Evaluation using Visualization – Residual Plot –Distribution Plot – Polynomial Regression and Pipelines – Measures for In-sampleEvaluation – Prediction and Decision Making.
V	Model Evaluation: Generalization Error – Out-of-Sample Evaluation Metrics – Cross Validation – Overfitting –Under Fitting and Model Selection – Prediction by using Ridge Regression – TestingMultiple Parameters by using Grid Search

Books for References

1. Jojo Moolayil, "Smarter Decisions : The Intersection of IoT and Data Science",PACKT, 2016.
2. Cathy O'Neil and Rachel Schutt , "Doing Data Science", O'Reilly, 2015.
3. David Dietrich, Barry Heller, Beibei Yang, "Data Science and Big data Analytics",EMC 2013
4. Raj, Pethuru, "Handbook of Research on Cloud Infrastructures for Big DataAnalytics", IGI Global.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Internet of Things and its Applications	320E6C
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 3	**Lecture Hours:5 per week**
Learning Objectives: (for teachers: what they have to do in the class/lab/field) To understand the concepts of Internet of Things and the application of IoT	
Course Outcomes: (for students: To know what they are going to learn) CO1: Use of Devices, Gateways and Data Management in IoT. CO2: Design IoT applications in different domain and be able to analyse their performance CO3: Implement basic IoT applications on embedded platform CO4: To gain knowledge on Industry Internet of Things CO5: To Learn about the privacy and Security issues in IoT	

Units	Contents
I	IoT & Web Technology, The Internet of Things Today, Time for Convergence, Towards the IoT Universe, Internet of Things Vision, IoT Strategic Research and Innovation Directions, IoT Applications, Future Internet Technologies, Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IoT Related Standardization, Recommendations on Research Topics.
II	M2M to IoT – A Basic Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.
III	IoT Architecture -State of the Art – Introduction, State of the art, Architecture. Reference Model- Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views
IV	IoT Applications for Value Creations Introduction, IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications, Four Aspects in your Business to Master IoT, Value Creation from Big Data and Serialization, IoT for Retailing Industry, IoT For Oil and GasIndustry, Opinions on IoT Application and Value for Industry, Home Management, eHealth.
V	Internet of Things Privacy, Security and Governance Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT-Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IoT in Smart Cities, Security

Learning Resources:

Recommended Texts

1. Vijay Madisetti and Arshdeep Bahga, "Internet of Things: (A Hands-on Approach)", Universities Press (INDIA) Private Limited 2014, 1st Edition.

Reference Books

1. Michael Miller, "The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the World", kindle version.
2. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", Apress Publications 2013, 1st Edition,.
3. WaltenegusDargie, ChristianPoellabauer, "Fundamentals of Wireless Sensor Networks: Theory and Practice" 4..CunoPfister, "Getting Started with the Internet of Things", O"Reilly Media 2011

UNIVERSITY OF MADRAS

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Cloud Computing	325E6D
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 3	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To impart fundamental concepts of Cloud Computing.
- To impart a working knowledge of the various cloud service types and their uses and pitfalls.
- To enable the students to know the common features and differences in the service offerings of the three major Cloud Computing service providers, namely Amazon, Microsoft and Google.
- To provide know-how of the various aspects of application design, benchmarking and security on the Cloud.

Course Outcomes: (for students: To know what they are going to learn)
CO1: To understand the concepts and technologies involved in Cloud Computing.
CO2: To understand the concepts of various cloud services and their implementation in the Amazon, Microsoft and Google cloud computing platforms.
CO3: To understand the aspects of application design for the Cloud.
CO4: To understand the concepts involved in benchmarking and security on the Cloud.
CO5: To understand the way in which the cloud is used in various domains.

Units	Contents
I	Introduction to Cloud Computing: Definition of Cloud Computing – Characteristics of Cloud Computing – Cloud Models – Cloud Service Examples – Cloud-based Services and Applications. Cloud Concepts and Technologies: Virtualization – Load balancing – Scalability and Elasticity – Deployment – Replication – Monitoring – Software Defined Networking – Network Function Virtualization – MapReduce – Identity and Access Management – Service Level Agreements – Billing.
II	Compute Services: Amazon Elastic Computer Cloud - Google Compute Engine - Windows Azure Virtual Machines. Storage Services: Amazon Simple Storage Service - Google Cloud Storage - Windows Azure Storage Database Services: Amazon Relational Data Store - Amazon Dynamo DB - Google Cloud SQL - Google Cloud Data Store - Windows Azure SQL Database - Windows Azure Table Service Application Services: Application Runtimes and Frameworks - Queuing Services - Email Services - Notifiction Services - Media Services Content Delivery Services: Amazon CloudFront - Windows Azure Content Delivery Network Analytics Services: Amazon Elastic MapReduce - Google MapReduce Service - Google BigQuery - Windows Azure HDInsight Deployment and Management Services: Amazon Elastic Beanstack - Amazon CloudFormation Identity and Access Management Services: Amazon Identiy and Access Management

	- Windows Azure Active Directory Open Source Private Cloud Software: CloudStack – Eucalyptus - OpenStack
III	Cloud Application Design: Introduction – Design Consideration for Cloud Applications – Scalability – Reliability and Availability – Security – Maintenance and Upgradation – Performance – Reference Architectures for Cloud Applications – Cloud Application Design Methodologies: Service Oriented Architecture (SOA), Cloud Component Model, IaaS, PaaS and SaaS Services for Cloud Applications, Model View Controller (MVC), RESTful Web Services – Data Storage Approaches: Relational Approach (SQL), Non-Relational Approach (NoSQL).
IV	Cloud Application Benchmarking and Tuning: Introduction to Benchmarking – Steps in Benchmarking – Workload Characteristics – Application Performance Metrics – Design Consideration for Benchmarking Methodology – Benchmarking Tools and Types of Tests – Deployment Prototyping. Cloud Security: Introduction – CSA Cloud Security Architecture – Authentication (SSO) – Authorization – Identity and Access Management – Data Security : Securing data at rest, securing data in motion – Key Management – Auditing.
V	Case Studies: Cloud Computing for Healthcare – Cloud Computing for Energy Systems - Cloud Computing for Transportation Systems - Cloud Computing for Manufacturing Industry - Cloud Computing for Education.

Learning Resources:

Recommended Texts

1. Arshdeep Bahga, Vijay Madisetti, *Cloud Computing – A Hands On Approach*, Universities Press (India) Pvt. Ltd., 2018.

Reference Books

1. Anthony T Velte, Toby J Velte, Robert Elsenpeter, *Cloud Computing: A Practical Approach*, Tata McGraw-Hill, 2013.

2. Barrie Sosinsky, *Cloud Computing Bible*, Wiley India Pvt. Ltd., 2013.

3. David Crookes, *Cloud Computing in Easy Steps*, Tata McGraw Hill, 2012.

4. Dr. Kumar Saurabh, *Cloud Computing*, Wiley India, Second Edition 2012.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Big Data Analytics	320E6E
Common for B.C.A. , B.Sc.-SA , B.Sc.-CSc , B.Sc.-CSc-wAI , B.Sc.-CSc-wDS	
Credits 3	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To know the fundamental concepts of big data and analytics.
- To explore tools and practices for working with big data.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Work with big data tools and its analysis techniques.
CO2: Analyse data by utilizing clustering and classification algorithms.
CO3: Learn and apply different mining algorithms and recommendation systems for large volumes of data.
CO4: Perform analytics on data streams.
CO5: Learn NoSQL databases and management.

Units	Contents
I	INTRODUCTION TO BIG DATA : Evolution of Big data — Best Practices for Big data Analytics — Big data characteristics — Validating — The Promotion of the Value of Big Data — Big Data Use Cases- Characteristics of Big Data Applications — Perception and Quantification of Value -Understanding Big Data Storage — A General Overview of High-Performance Architecture — HDFS — MapReduce and YARN — Map Reduce Programming Model
II	CLUSTERING AND CLASSIFICATION: Advanced Analytical Theory and Methods: Overview of Clustering — K-means — Use Cases — Overview of the Method — Determining the Number of Clusters — Diagnostics — Reasons to Choose and Cautions. - Classification: Decision Trees — Overview of a Decision Tree — The General Algorithm — Decision Tree Algorithms — Evaluating a Decision Tree — Decision Trees in R — Naïve Bayes — Bayes? Theorem — Naïve Bayes Classifier
III	ASSOCIATION AND RECOMMENDATION SYSTEM:Advanced Analytical Theory and Methods: Association Rules — Overview — Apriori Algorithm — Evaluation of Candidate Rules — Applications of Association Rules — Finding Association& finding similarity — Recommendation System: Collaborative Recommendation- Content Based Recommendation — Knowledge Based Recommendation- Hybrid Recommendation Approaches
IV	STREAM MEMORY: Introduction to Streams Concepts — Stream Data Model and Architecture — Stream Computing, Sampling Data in a Stream — Filtering Streams — Counting Distinct Elements in a Stream — Estimating moments — Counting oneness in a Window — Decaying Window — Real time Analytics Platform (RTAP) applications — Case Studies — Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics

V	NOSQL DATA MANAGEMENT FOR BIG DATA AND VISUALIZATION: NoSQL Databases: Schema-less Models- Increasing Flexibility for Data Manipulation-Key Value Stores- Document Stores — Tabular Stores — Object Data Stores — Graph Databases Hive — Sharding —Hbase — Analyzing big data with twitter — Big data for E-Commerce Big data for blogs — Review of Basic Data Analytic Methods using R.

Learning Resources:

Recommended Texts
1. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", CambridgeUniversity Press, 2012.

Reference Books
1. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration withTools, Techniques, NoSQL, and Graph", Morgan Kaufmann/El sevier Publishers, 2013.
2. EMC Education Services, "Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data", Wiley publishers, 2015.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Block Chain Technology	325E6F
Credits 3	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
- To understand the concepts of block chain technology
- To understand the consensus and hyper ledger fabric in block chain technology.

Course Outcomes: (for students: To know what they are going to learn)
1. State the basic concepts of block chain
2. Paraphrase the list of consensuses and Demonstrate and Interpret working of Hyper ledger Fabric
3. Implement SDK composer tool and explain the Digital identity for government

Units	Contents
I	History: Digital Money to Distributed Ledgers -Design Primitives: Protocols, Security, Consensus, Permissions, Privacy- : Block chain Architecture and Design-Basic crypto primitives: Hash, Signature Hash chain to Block chain-Basic consensus mechanisms.
II	Requirements for the consensus protocols-Proof of Work (PoW)-Scalability aspects of Block chain consensus protocols: Permissioned Block Chains-Design Goals-Consensus protocols for Permissioned Block chains.
III	Decomposing the consensus process-Hyper ledger fabric components-Chain code Design and Implementation: Hyper ledger Fabric II:-Beyond Chain code: fabric SDK and Front End-Hyper ledger composer tool.
IV	Block chain in Financial Software and Systems (FSS): -Settlements, -KYC, -Capital Markets-Insurance Block chain in trade/supply chain: Provenance of goods, visibility, trade/supply chain finance, invoice management/discounting.
V	Block chain for Government: Digital identity, land records and other kinds of record keeping between government entities, public distribution system / social welfare systems: Block chain Cryptography: Privacy and Security on Block chain.

TEXT BOOKS:

1. Mark Gates, "Block chain: Ultimate guide to understanding block chain, bit coin, crypto currencies, smart contracts and the future of money", Wise Fox Publishing and Mark Gates 2017.
2. Salman Baset, Luc Desrosiers, Nitin Gaur, Petr Novotny, Anthony O'Dowd, Venkatraman Ramakrishna, "Hands-On Block chain with Hyper ledger: Building decentralized applications with Hyperledger Fabric and Composer", 2018.
3. Bahga, Vijay Madisetti, "Block chain Applications: A Hands-On Approach", Arshdeep Bahga,Vijay Madisetti publishers 2017.

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2023-2024

Year: III   **Semester: VI**

Advanced Excel Practical	325S61
Common for B.Sc.-SA , B.Sc.-CSc	
Credits 2	**Lecture Hours: 2 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
The objective of this course is to help the students learn the advanced features of Excel, to summarise, analyse, explore, and present visualisations of data in the form of charts, graphs.

Course Outcomes: (for students: To know what they are going to learn)
CO1: Handle large amounts of data
CO2: Aggregate numeric data and summarise into categories and subcategories
CO3: Filtering, sorting, and grouping data or subsets of data
CO4: Create pivot tables to consolidate data from multiple files
CO5: Presenting data in the form of charts and graphs

Units	Contents
I	Basics of Excel-Customizing common options-Absolute and relative cells-Protecting and un-protecting worksheets and cells- Working with Functions - Writing conditional expressions -logical functions -lookup and reference functions-VlookUP with Exact Match, Approximate Match-Nested VlookUP with Exact Match-VlookUP with Tables, Dynamic Ranges-Nested VlookUP with Exact Match-Using VLookUP to consolidate Data from Multiple Sheets
II	Data Validations - Specifying a valid range of values -Specifying a list of valid values-Specifying custom validations based on formula - Working with TemplatesDesigning the structure of a template-templates for standardization of worksheets - Sorting and Filtering Data -Sorting tables-multiple-level sorting-custom sorting-Filtering data for selected view -advanced filter options- Working with ReportsCreating subtotals-Multiple-level subtotal.
III	Creating Pivot tablesFormatting and customizing Pivot tables-advanced options of Pivot tables-Pivot charts-Consolidating data from multiple sheets and files using Pivot tables-external data sources-data consolidation feature to consolidate data-Show Value As % of Row, % of Column, Running Total, Compare with Specific Field-Viewing Subtotal under Pivot-Creating Slicers.
IV	More FunctionsDate and time functions-Text functions-Database functions-Power Functions - FormattingUsing auto formatting option for worksheets-Using conditional formatting option for rows, columns and cells-WhatIf Analysis - Goal Seek-Data Tables-Scenario Manager
V	Charts -Formatting Charts-3D Graphs-Bar and Line Chart together-Secondary Axis in Graphs-Sharing Charts with PowerPoint / MS Word, Dynamically- New Features Of Excel Sparklines, Inline Charts, data Charts- Overview of all the new features.

Learning Resources:

Recommended Tex

Excel 2019 All-in-One For Dummies – 2018- Greg Harvey

Reference Books

Microsoft Excel 2019 Pivot Table Data Crunching-2019,Bill Jelenand Michael Alexander

Web resources: Web resources from NDL Library, E-content from open source libraries

UNIVERSITY OF MADRAS
சென்னைப் பல்கலைக்கழகம்
[Established under the Act of Incorporation XXVII of 1857
– Madras University Act 1923] [State University]
Centenary Building, Chepauk, Chennai – 600 005

No.V.3/S.1 /Common template for UG/2024/ 292   Date: - 8 OCT 2024

From
The Registrar,
University of Madras.

To
The Principals of all affiliated Arts and Science College (Autonomous/Non-Autonomous)

Sir/Madam,

    Sub: Academic- Implementation of common Template for all UG Degree
          Programme from the academic year 2023-2024 - Reg
                              *****

    I am by direction to inform you that the common Template for all UG Degree
Programme inclusion of Naan Mudhalvan course from 2nd semester to 6th semester from
the academic year 2023-2024 offered in the affiliated Arts and Science Colleges is adopted
based on the letter received from TANSCHE.

    I am forwarding herewith the common Template for all UG Degree Programmes.

    This may kindly be brought to the notice of the concerned Department/
Staff/Students in your colleges without fail.

    The receipt of this communication may kindly be acknowledged.

    Thanking you,

                                                        Yours faithfully,

                                                        S. Kailasam
                                                     for REGISTRAR

Encl: as above

UNIVERSITY OF MADRAS
Revised Template for the Scheme of Examination and Credit Distribution for UG Degree Programmes which Includes Naan Mudhalvan Courses with effect from the academic year 2023-2024 onwards

Component	Semester I	Credits	Hours
Part I	Languages – Tamil/Other Languages - 1	3	6
Part II	English 1	3	6
Part III	Core Course - CC 1	5	5
	Core Course - CC 2	5	5
	Elective 1 Generic/Discipline Specific	3	4
Part IV	Skill Enhancement Course (SEC) - 1	2	2
	Skill Enhancement(Foundation Course)	2	2
		23	**30**

Component	Semester II	Credits	Hours
Part I	Languages – Tamil /Other Languages - 2	3	6
Part II	English - 2	3	4 + 2*
Part III	Core Course - CC 3	5	5
	Core Course - CC 4	5	5
	Elective 2 Generic/Discipline Specific	3	4
Part IV	Skill Enhancement Course (SEC) - 2	2	2
	NMC- 1 * (Naan Mudhalvan Course) - Language Proficiency for Employability	2	2*
	Skill Enhancement Course – (SEC) -3	2	2
		25	**30**

- The Instructional hours distributed for Part-II English is 4 hours instead of 6 hours and the 2 hours provided for Language Proficiency for Employability (Naan Mudhalvan Course (NMC-I)) which shall be handled by the faculty of English Department only .

Component	Semester III	Credits	Hours
Part I	Languages – Tamil /Other Languages - 3	3	6
Part II	English - 3	3	6
Part III	Core Course - CC 5	5	5
	Core Course - CC 6	5	5
	Elective 3 Generic/Discipline Specific	3	4
Part IV	Skill Enhancement Course (SEC) - 4 (Entrepreneurial Skill)	1	1
	NMC-2 (Naan Mudhalvan Course/Skill Enhancement Course (SEC) - 5	2	2
	E.V.S.	-	1
		22	**30**

Contd..2..

Component	Semester IV	Credit	Hours
Part I	Languages – Tamil /Other Languages - 4	3	6
Part II	English - 4	3	6
Part III	Core Course - CC 7 Core Industry Module	5	5
	Core Course 8	5	5
	Elective 4 Generic/Discipline Specific	3	3
Part IV	NMC-3 (Naan Mudhalvan Course)/Skill Enhancement Course (SEC) - 6	2	2
	E.V.S	2	1
	Value Education	2	2
		25	**30**

Component	Semester V	Credits	Hours
Part I	Core Course - CC 9	4	5
Part II	Core Course - CC 10	4	5
Part III	Core Course - CC 11	4	5
	Core Course/ Project with viva-voce - CC 12	4	5
	Elective - 5 Generic/Discipline Specific	3	4
	Elective - 6 Generic/Discipline Specific	3	4
Part IV	NMC-4 (Naan Mudhalvan Course)/Skill Enhancement Course (SEC) - 7	2	2
	Summer Internship/Industrial Training	2	-
		26	30

Component	Semester VI	Credit	Hours
Part I	Core Course 13	4	6
Part II	Core Course 14	4	6
Part III	Core Course 15	4	6
	Elective - 7 Generic/Discipline Specific	3	5
	Elective - 8 Generic/Discipline Specific	3	5
Part IV	NMC- 5 (Naan Mudhalvan Course)/ Professional Competency Skill	2	2
Part V	Extension Activity	1	-
		21	30

- Total – 142 Credits (Minimum Credits required for the award of Degree 142)
- Originally Value Education subjects in the V Semester, now it is shifted to IV Semester in view of accommodating Naan Mudhalvan Course in the V Semester.
- Naan Mudhalvan Courses are mandatory for award of Degree for all UG Programmes, If a student is long absentee/lack of attendance for exceptional cases, he/she shall not be mapped for NM courses, instead the existing Skill Enhancement Course (SEC) shall be offered to the said students for award of Degree.

*****