Sadakathullah Appa College

(Autonomous)

(Reaccredited by NAAC at an 'A++' Grade. An ISO 9001:2015 Certified Institution)

Rahmath Nagar, Tirunelveli - 11.

Tamil Nadu.

DEPARTMENT OF MATHEMATICS

MY LORD
VOUCHSAFE ME WISDOM

CBCS SYLLABUS

Learning Outcomes-based Curriculum Framework for

MATHEMATICS (B.Sc.)

(Applicable for the students admitted from June 2024)

(As per the Resolutions of the Academic Council Meeting held on 01.06.2024)

CONTENTS

Sadakathullah Appa College, Rahmath Nagar, Tirunelveli – 627 011.
Programme Structure & Credits – UG (Mathematics) - 2024 – 2027

Sem	Part	Course Type	Title of the Course	Course Code	H/W	C	Marks		
							I	E	T
I	I	Lang-I	Prose	24ULAR11	6	3	25	75	100
			பொதுத் தமிழ் 1 - தமிழ் இலக்கிய வரலாறு - 1	24ULTA11					
	II	Lang-II	General English - I	24ULEN11	6	3	25	75	100
	III	Core-I	Algebra &Trigonometry	24UCMA11	4	4	25	75	100
	III	Core-II	Differential Calculus	24UCMA12	4	4	25	75	100
	III	EC-T-I (GE)	C Programming	24UACS11	4	3	25	75	100
	III	EC-P-I (GE)	C-Programming Practical	24UACS1P	2	2	20	30	50
	IV	SEC-I (NME)	Mathematics for Competitive Examination I	24UNMA11	2	2	15	35	50
	IV	FC	Bridge Mathematics	24UFMA11	2	2	15	35	50
					30	**23**			**650**
II	I	Lang-I	Grammar	24ULAR21	6	3	25	75	100
			பொதுத் தமிழ் 2 - தமிழ் இலக்கிய வரலாறு - 2	24ULTA21					
	II	Lang-II	General English - II	24ULEN21	6	3	25	75	100
	III	Core-III	Analytical Geometry (2D &3D)	24UCMA21	4	4	25	75	100
	III	Core-IV	Integral Calculus	24UCMA22	4	4	15	35	50
	III	EC-T-II (GE)	C++ Programming	24UACS21	4	4	25	75	100
	III	EC-P-II (GE)	C++ Programming Practical	24UACS2P	2	1	20	30	50
	IV	SEC-II (NME)	Mathematics for Competitive Examination II	24UNMA21	2	2	15	35	50
	IV	SEC-III	Value Education –I	24USVE2A	2	2	15	35	50
			Value Education –II	24USVE2B					
					30	**23**			**650**

Department of Mathematics

Programme Outcomes

PO	Upon completion of B.Sc. Degree Programme, the students will be able to:
PO 1	**Disciplinary Knowledge** • Acquire scientific knowledge and an understanding of major concepts and theoretical principles.
PO 2	**Creative Thinking and Practical Skills / Problem-Solving Skills** • Enrich skills of observation/research-related skills to draw logical inferences from scientific experiments/ programming and skills of creative thinking to develop novel ideas. • Hone problem-solving skills in theoretical, experimental, and computational areas and apply them in research fields and real-life situations.
PO 3	**Sense of inquiry and Skilled Communicator** • Develop the capability to raise appropriate questions relating to the current/emerging issues encountered in the scientific field and plan, execute, and express the results of experiments / investigations through technical writings and oral presentations
PO 4	**Ethical Awareness / Team Work / Environmental Conservation and Sustainability** • Equip them for conducting work as an individual / as a member, or as a leader in diverse teams upholding values such as honesty and precision and thus preventing unethical behaviors such as fabrication, falsification, misrepresentation of data, plagiarism, etc.to ensure academic integrity. • Realize that environment and humans are dependent on one another and know about the responsibe management of our ecosystem for survival and the well-being of the future generation.
PO 5	**Usage of ICT/ Lifelong Learning / Self-Directed Learning** • Inculcate the habit of learning continuously through the effective adoption of ICT to update knowledge in the emerging areas in Sciences for inventions/discoveries and engage in remote/independent learning.
PO 6	**Research-related skills**: • A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

Programme Specific Outcomes

PSO	Upon completion of B.Sc. Mathematics Degree Programme, the students will be able to:	POs Mapped
PSO-1	Acquiregood knowledge and understanding, to solve specific theoretical & applied problemsin different area of mathematics & statistics.	1,3,6
PSO-2	Understand, formulate, develop mathematical arguments, logically and use quantitative models to address issues a rising in social sciences, business and other context/fields.	1,2,3,6
PSO-3	To prepare the students who will demonstrate respectful engagement with others ideas, behaviors, beliefs and apply diverse frames of references to decisions and actions. To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations.	1,2,3,4,6
PSO-4	Take up a Project Work as a team for enriching team work skills and to uphold academic and professional integrity.	1,2,3,4,5, 6
PSO-5	Use ICT to engage themselves in remote learning / independent learning	1,2,5,6

Semester - I	PROSE		24ULAR11			
LAN – I			L	T	P	C
Hrs./Week: 6	Hrs./Semester : 60	Marks :100	6	-	-	3

General Objective: To make the students to understand the structure of Arabic language and impove the reading and writing skills.

Learning Objectives

LO	The learners will be able to:
LO-1	Understand basic Arabic grammar.
LO-2	Understand the structure of Arabic language.
LO-3	Employ sentence making.
LO-4	Enhance vocabulary.
LO-5	Improve reading and writing skills.

UNIT I - من الدرس الأول إلى الدرس الرابع

UNIT II - من الدرس الخامس إلى الدرس الثامن

UNIT III – من الدرس التاسع إلى الدرس الثالث عشر

UNIT IV – من الدرس الرابع عشر إلى الدرس الثامن عشر

UNIT V – من الدرس التاسع عشر إلى الدرس الثالث و العشرون

Textbooks:

1. دروس اللغة العربية لغير الناطقين بها، الجزء الأول، الدكتور ف. عبد الرحيم

Reference Books:

1. معجم الكلمات الواردة في دروس اللغة العربية لغير الناطقين بها
2. مفتاح دروس اللغة العربية لغير الناطقين بها
3. القراءة الراشدة – للشيخ أبي الحسن علي الحسني الندوي
4. القراءة المفيدة – للدكتور محمد يوسف كوكن العمري
5. منهاج العربية -السيد النبي حيدرآبادي

www.alnahw.com

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Understand the correct pronunciation of Arabic letters	PSO 1	K2
CO-2	Apply the structure-based composition	PSO 1,2	K3
CO-3	List out the new vocabulary in Arabic	PSO 1	K4
CO-4	Evaluate and read the Arabic sentences without diacritical marks	PSO 1,2	K5
CO-5	Able to create the simple sentences in Arabic without errors.	PSO 1	K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
I	24ULAR11	PROSE	90	3

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	3	3	1	2	1	1	3	2	2	1	1
CO-2	3	3	1	2	1	1	3	2	2	1	1
CO-3	3	3	1	2	1	1	3	2	2	1	1
CO-4	3	3	1	2	1	1	3	2	2	1	1
CO-5	3	3	1	2	1	1	3	2	2	1	1

STRONG – 3, MEDIUM – 2 , LOW – 1

Prepared by : Dr. S.A.Mohamed Rafeek Checked by: Dr. J. Ubaiyathulla

Head of the Department

Semester - I	பொதுத்தமிழ் - 1		24ULTA11			
LAN – I	தமிழ் இலக்கிய வரலாறு - 1		L	T	P	C
Hrs./Week: 6	Hrs./Semester : 90	Marks :100	6	-	-	3

General Objective:

- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல் நடைமுறைகளை மேற்கொள்ளுதல்.

Learning Objectives:

LO	The learners will be able to:
LO - 1	தமிழ் இலக்கண, இலக்கியங்களை மாணவர்கள் அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்.
LO - 2	சங்க இலக்கியத்தில் காணப்பெறும் வாழ்வியல் சிந்தனைகளை அறிந்து கொள்வர்.
LO - 3	அற இலக்கியங்களை அறியச் செய்து வாழ்வின் விழுமியங்களை பயிற்றுவித்தல்.
LO - 4	காப்பியங்களை அறிமுகம் செய்து அதன் வழி வாழ்வியலை புரியச் செய்தல்.
LO - 5	பக்தி இலக்கியங்களின் மூலம் பக்தியுணர்வை ஊட்டுதல்.

அலகு 1 இலக்கணம்

1. தொல்காப்பியம், இறையனார் களவியல் உரை, நம்பியகப் பொருள், புறப்பொருள் வெண்பா மாலை, நன்னூல், தண்டியலங்காரம், யாப்பருங்கலக்காரிகை - நூல்கள்
2. மொழிப் பயிற்சி - ஒற்றுப்பிழை தவிர்த்தல்
    - வல்லினம் மிகும் இடங்கள்
    - வல்லினம் மிகா இடங்கள்
    - ஈரொற்று வரும் இடங்கள்
    - ஒரு, ஓர் வரும் இடங்கள்
    - அது, அ.ஃது வரும் இடங்கள்
    - தான், தாம் வரும் இடங்கள்

1. சங்க இலக்கியம் - எட்டுத் தொகை, பத்துப்பாட்டு.
2. அற இலக்கியம் - பதினெண்கீழ்க்கணக்கு நூல்கள்.
3. காப்பிய இலக்கியம் - ஐம்பெருங் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், சமயக் காப்பியங்கள்.
4. பக்தி இலக்கியமும் (பன்னிரு திருமுறைகள் நாலாயிர திவ்வியப் பிரபந்தம்), பகுத்தறிவு இலக்கியமும் (சித்தர் இலக்கியங்கள், புலவர் குழந்தையின் இராவண காவியம்)

அலகு 2 சங்க இலக்கியம் - எட்டுத்தொகை, பத்துப்பாட்டு

எட்டுத்தொகை

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- சுடர்த்தொடீஇக் கேளாய் - குறிஞ்சிக் கலி.
5. புறநானூறு - 189 தெண்கடல் வளாகம் பொதுமையின்றி, நாடா கொன்றோ -187

பத்துப்பாட்டு

1. முல்லைப்பாட்டு (முழுவதும்)

அலகு 3 அற இலக்கியம் பதினெண்கீழக்கணக்கு நூல்கள்

1. திருக்குறள் - அறன் வலியுறுத்தல் அதிகாரம்
2. நாலடியார் - பாடல் : 131 (குஞ்சியழகும்)
3. நான்மணிக்கடிகை - நிலத்துக்கு அணியென்ப
4. பழமொழி நானூறு - தம் நடை நோக்கர்
5. இனியவை நாற்பது - 37 இளமையை மூப்பு என்று

அலகு 4 காப்பிய இலக்கியம் (ஐம்பெருங் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், சமயக் காப்பியங்கள்)

1. சிலப்பதிகாரம் - வழக்குரைகாதை
2. மணிமேகலை - பாத்திரம் பெற்ற காதை
3. பெரியபுராணம் - பூசலார் நாயனார் புராணம்
4. கம்பராமாயணம் - குகப் படலம்
5. சீறாப்புராணம் - மானுக்குப் பிணை நின்ற படலம்
6. இயேசு காவியம் - ஊதாரிப்பிள்ளை

அலகு 5 பக்தி இலக்கியமும், பகுத்தறிவு இலக்கியமும் (பக்தி இலக்கியம் பன்னிரு திருமுறைகள், நாலாயிர திவ்வியப் பிரபந்தம் - பகுத்தறிவு இலக்கியம் (சித்தர் இலக்கியங்கள், புலவர் குழந்தையின் இராவண காவியம்)

பக்தி இலக்கியம்:

1. திருநாவுக்கரசர் தேவாரம் - "நாமார்க்கும் குடியல்லோம்" எனத் தொடங்கும் பாடல் மட்டும்
2. மாணிக்கவாசகர் திருவாசகம் - "நமச்சிவாய வாழ்க நாதன் தாள் 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

1. திருமூலர் - திருமந்திரம் (270, 271, 274, 275 285) பட்டினத்தார் திருவிடை மருதூர் (காடே திரிந்து – எனத் தொடங்கும் பாடல் பா.எண். 279, 280)
2. கடுவெளிச் சித்தர் - பாபஞ்செய் யாதிரு மனமே (பாடல் முழுவதும்)
3. இராவண காவியம் - தாய்மொழிப் படலம் - 18, ஏடுகையில்லா ரில்லை முதல்- 22 செந்தமிழ் வளர்த்தார் வரை.

பாட நூல்:

பதிப்பாசிரியர் முனைவர் ச.மகாதேவன்,
பொதுத்தமிழ் 1,
சதக்கத்துல்லாஹ் அப்பா கல்லூரி வெளியீடு,2024 – 2025(முதற் பதிப்பு).

பார்வை நூல்கள் :

1. மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அகாதெமி, புதுடெல்லி.
2. மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
3. தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
4. தமிழ் இலக்கிய வரலாறு – முனைவர்.சிற்பி பாலசுப்ரமணியம், முனைவர்.சொ.சேதுபதி
5. புதிய தமிழ் இலக்கிய வரலாறு – முனைவர்.சிற்பி பாலசுப்ரமணியம், நீல.பத்மநாபன்
6. தமிழ் இலக்கிய வரலாறு - டாக்டர்.அ.கா.பெருமாள்
7. தமிழ் இலக்கிய வரலாறு - முனைவர். ப.ச.ஏசுதாசன்
8. தமிழ் இலக்கிய வரலாறு – ஸ்ரீகுமார்
9. வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு – பாக்கியமேரி
10. தமிழ் பயிற்றும் முறை, பேராசிரியர் ந. சுப்புரெட்டியார் - மணிவாசகர் பதிப்பகம், சிதம்பரம்

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

Course Outcomes

CO	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	மொழியறிவோடு சிந்தனைத் திறனைப் பெறுவர்.	1, 2, 3	K4
CO-2	சங்க இலக்கியத்தில் காணப்பெறும் வாழ்வியல் சிந்தனைகளை அறிந்து கொள்வர்.	1, 4	K3, K4
CO-3	அற இலக்கியம் தமிழ்க் காப்பியங்களின் வழி வாழ்வியல் சிந்தனையைப் பெறுவர்.	2.3,4	K3, K4,
CO-4	பக்தி இலக்கியங்களைக் கற்பதன் மூலம் பக்தி நெறியினை அறிவர்.	4,5	K3, K6
CO-5	பகுத்தறிவு இலக்கியங்களைக் கற்பதன் வழி சமய நல்லிணக்கத்தைப் பின்பற்றுவர்.	2,3,4	K5, K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
I	24ULTA11	தமிழ் இலக்கிய வரலாறு - 1	90	3

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	2	3	3	3	2	2	2	3	2	3
CO-2	3	3	2	2	2	3	2	3	3	2	2
CO-3	3	2	3	3	2	2	2	3	2	3	2
CO-4	-	3	3	2	2	2	3	2	3	2	2
CO-5	-	3	2	2	2	3	3	2	2	2	2

3 - STRONG, 2 - MEDIUM, 1- LOW

Prepared by : Dr. A.S. Shaik Sindha

Checked by: Dr.S.Mahadevan

Head of the Department

Semester - I	General English - 1		24ULEN11			
LANG- II			L	T	P	C
Hrs./Week: 6	Hrs./Semester : 90	Marks :100	6	-	-	3

General Objective:

To train learners to communicate effectively, think critically, and express themselves creatively.

Learning Objectives (LO)

LO	The learners will be able to :
LO – 1	Acquire self-awareness and develop positive thinking which are required in various situations.
LO – 2	Develop the attribute of empathy
LO – 3	Acquire creative and critical thinking skills
LO – 4	Learn the basics of grammar
LO – 5	Develop Listening, Speaking, Reading and Writing (LSRW) skills

Unit - I

The Skill-focused: Self-Awareness and Positive Thinking

Autobiography

1. *I am Malala* (Chapter 1) by Malala Yousafzai.
2. *The Story of My Experiments with Truth* (Chapters 1, 2 and 3) by M.K.Gandhi.

Poetry

1. "Where the Mind is Without Fear" (*Gitanjali*, Verse – 35) by Rabindranath Tagore
2. "Love Cycle by Chinua Achebe"

Unit – II

The Skill Focused: Empathy

Poetry

1. "Nine Gold Medals" – David Roth
2. "Alice Fell or Poverty" – William Wordsworth

Short Story

1. The School for Sympathy – E.V. Lucas
2. Barn Burning – William Faulkner

Unit – III

The Skills Focused:Critical and Creative Thinking

Poetry

1. "The Things That Haven't Been Done Before" – Edgar Guest
2. "Stopping by the Woods on a Snowy Evening" – Robert Frost

Readers Theatre

1. The Magic Brocade – A Tale of China
2. "Three Sideway Stories from Wayside School" by Louis Sachar adapted from the book *Stories on Stage* by Aaron Shepard.

Unit – IV

Parts of Speech

1. Articles
2. Noun
3. Pronoun
4. Verb
5. Adverb
6. Adjective
7. Preposition

Unit – V

Paragraph and Essay Writing

1. Descriptive
2. Expository
3. Persuasive
4. Narrative

Reading Comprehension

Types of Reading: Extensive and Intensive Reading
Vocabulary Building
Critical text analysis
Deep reading (Pages 72 to 84 from TANSCHE Syllabus - 2022)

Textbooks

1. Malala Yousafzai. *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. Mac Millan, 1913.
4. N. Krishnasamy, *Modern English: A Book of Grammar, Usage and Composition*, Macmillan, 1975.
5. Aaron Shepard. *Stories on Stage*, Shepard Publications, 2017.
6. J.C. Nesfield. *English Grammar, Composition and Usage*, Macmillan, 2019.

Web Sources

1. Malala Yousafzai. 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

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Understand self- awareness and positive thinking required in various life situations	1,2,3	K1, K2
CO-2	Acquire the attribute of empathy.	1,2,3,4	K2, K3
CO-3	Develop creative and critical thinking abilities.	1,2,3,4	K3, K4
CO-4	Explain basic grammar, develop and integrate the use of four language skills (LSRW)	2, 3	K4, K5
CO-5	Compose original poems and personal narratives.	1,2,3,4	K5, K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
1	24ULEN11	General English 1	90	3

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	1	2	3	3	3	3	3	3
CO2	3	3	3	1	2	3	3	3	3	1	1
CO3	3	3	1	3	3	2	3	3	3	1	1
CO4	3	3	1	2	1	3	3	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3	3

STRONG – 3, MEDIUM – 2 AND LOW - 1

Prepared by: Dr.L.Faustina Leo

Checked by
Dr.S.Mohamed Haneef
Head of the Department

Semester - I	ALGEBRA & TRIGONOMETRY		24UCMA11			
Core – I			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

GENERAL OBJECTIVE:

1. Basic ideas on the Theory of Equations, Matrices and Number Theory.
2. Knowledge to find expansions of trigonometry functions, solve theoretical and applied problems.

LEARNING OBJECTIVES:

LO	The learners will be able to:
LO-1	Analyze the types of reciprocal equations and also find the roots of the equations using Horners Method
LO-2	Find the sum of binomial, exponential and logarithmic series
LO-3	Find Eigen values, Eigen vectors, verify Cayley – Hamilton theorem and diagonalize a given matrix
LO-4	Expand the powers and multiples of trigonometric functions in terms of sine and cosine
LO-5	Determine relationship between circular and hyperbolic functions and the summation of trigonometric series

Unit I: Reciprocal Equations-Standard form–Increasing or decreasing the roots of a given equation- Removal of terms, Approximate solutions of roots of polynomials by Horner's method – related problems.

Unit II: Summation of Series: Binomial– Exponential –Logarithmic series (Theorems without proof) – Approximations - related problems.

Unit III: Characteristic equation – Eigen values and Eigen Vectors-Similar matrices - Cayley – Hamilton Theorem (Statement only) - Finding powers of square matrix, Inverse of a square matrix up to order 3, Diagonalization of square matrices - related problems.

Unit IV: Expansions of sinnθ, cosnθ in powers of sinθ, cosθ - Expansion of tannθ in terms of tan θ, Expansions of $\cos^n\theta$, $\sin^n\theta$, $\cos^m\theta\sin^n\theta$ –Expansions of $\tan(\theta_1+\theta_2+,\ldots,+\theta_n)$-related problems.

Unit V: Hyperbolic functions – Relation between circular and hyperbolic functions- Inverse hyperbolic functions, Logarithm of complex quantities-related problems.

Text Books:

1. T.K. Manicavachagam Pillar. T. Natarajan and K S. Ganapathy, Algebra, Vol I, S. Viswanathan Publishers and Printers PVT. Ltd, 2008.
2. T.K. Manicavachagam Pillar. T. Natarajan and K S. Ganapathy, Algebra, Vol II, S. Viswanathan Publishers and Printers PVT. Ltd, 2008.
3. T.K Manicavachagam Pillai, S. Narayanan, Trigonometry, Viswanathan Publishers and Printers PVT, Ltd, 2013.

Unit I: TB1: Chapter 6(Section 16,17,18,30)
Unit II: TB1: Chapter 3(Section 10,14) ; Chapter 4 (Section 1,2,3,5,7,8,9,11)
Unit III: TB2: Chapter 2 (Section 8,16)
Unit IV: TB3: Chapter 3(Section 1 to 4)
Unit V: TB3: Chapter 4, Chapter 5, (Section 5)

Reference Books:

1. Arumugam S. and Isaac, *Algebra (Theory of equations, Theory of numbers and Trigonometry)* New Gamma Publications, Palayamkottai, Edition 2011.
2. Arumugam Sand Issac.*Modern Algebra*, SCITECH Publications (India) Pvt.Ltd, Chennai Edition 2012.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Classify and solve different types reciprocal equations	1, 2	K2, k3
CO-2	Define the sum of binomial, exponential and logarithmic series	1, 2	K1 ,k3
CO-3	Find Eigen values, Eigen vectors, verify Cayley – Hamilton theorem and diagonalize a given matrix	1, 2	K3, k5
CO-4	Expand the powers and multiples of trigonometric functions in terms of sine and cosine	1, 2	K1 ,k3
CO-5	Describe the relationship between circular and hyperbolic functions and the summation of trigonometric series	1, 2	K2, k3

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

RELATIONSHIP MATRIX

SEMESTER	COURSE CODE		TITLE OF THE COURSE			HOURS		CREDIT		
I	24UCMA11		ALGEBRA & TRIGONOMETRY			60		4		
Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	2	1	3	3	3	2	1	1
CO-2	3	3	3	1	1	3	3	3	1	1	1
CO-3	3	3	3	1	2	3	3	3	2	1	1
CO-4	3	3	3	1	1	3	3	3	1	2	1
CO-5	3	3	3	1	2	3	3	3	2	1	1

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by: Dr.S.Firthous Fatima Checked by: Dr.S.Firthous Fatima

Head of the Department

Semester - I	DIFFERENTIAL CALCULUS		24UCMA12			
Core – II			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objective:

To recognize the basic knowledge on the notions of curvature, evolutes, involutes and polar co-ordinates and in solving related problems.

Learning Objectives:

LO	The learners will be able to:
LO-1	Impart the basics of n th derivatives.
LO-2	Apply the differentiation concept to find the total differential coefficients.
LO-3	Find the Maxima and Minima of functions of two variables.
LO-4	Study various Method of finding the envelope.
LO-5	Apply the concept of differentiation to solve Circle, Radius and Centre of Curvature.

Unit I: Successive Differentiation: Introduction (Review of basic concepts) – The n^{th} derivative – Standard results –Trigonometrical transformation – Formation of equations involving derivatives – Leibnitz formula for the n^{th} derivative of a product .

Unit II: Partial Differentiation: Partial derivatives – Successive partial derivatives – Function of a function rule – Total differential coefficient .

Unit III: Partial Differentiation (Continued): Homogeneous functions – Partial derivatives of a function of two variables – Maxima and Minima of functions of two variables .

Unit IV: Envelope: Method of finding the envelope – Another definition of envelope – Envelope of family of curves which are quadratic in the parameter.

Unit V:Curvature: Definition of Curvature – Circle, Radius and Centre of Curvature – Evolutes and Involutes – Radius of Curvature in Polar Co-ordinates.

Text Books:

1. S.Narayanan and TK.Manicavachagom Pillax, Calculus, Vol1, S.Viswanathan (Printers & Publication) PVT. LID.2015.

Unit I: Chapter 3-Sections 1.1-1.6 & 2.1,Related problems

Unit II: Chapter 8-Sections 1.1-1.5

Unit III: Chapter 8-Sections 1.6,1.7 & 4

Unit IV: Chapter 10-Sections 1.1-1.4

Unit V: Chapter 10-Sections 2.1-2.6

Reference Books

1. S. Armugam and A.Thangapandi Issac, Calculus, New Gamma Publishing House, Palayamkottai 2011

2. R.Courant and F. John, Introduction to Calculus and Analysis (Volumes I & II), Springer- Verlag, New York, Inc., 1989.

3. T.Apostol, Calculus, Volumes I and II.

4. S.Goldberg, Calculus and mathematical analysis.

5. H. Anton, I. Birens and S. Davis, Calculus, John Wiley and Sons, Inc., 2002.

6. G.B.Thomas and R.L.Finney, Calculus, Pearson Education, 2010. M.J. Strauss, G.L.

7. Bradleyand K.J. Smith, Calculus, 3rdEd., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Find the nth derivative, form equations involving derivatives and apply Leibnitz formula.	1, 2	K3
CO-2	Find the partial derivative and total derivative coefficient.	1, 2	K2, K3
CO-3	Determine maxima and minima of functions of two variables and to use the Lagrange's method of undetermined multipliers.	1, 2	K3
CO-4	Find the envelope of a given family of curves.	1, 2	K5
CO-5	Find the evolutes and involutes and to find the radius of curvature using polar co-ordinates.	1, 2	K3,K4

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

SEMESTER	COURSE CODE	TITLE OF THE COURSE	HOURS	CREDITS
I	**24UCMA12**	**DIFFERENTIAL CALCULUS**	**60**	**4**

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**
CO-1	3	3	3	2	2	3	3	3	2	1	1
CO-2	3	3	3	1	1	3	3	3	1	1	1
CO-3	3	3	3	1	1	3	3	3	2	1	1
CO-4	3	3	3	1	1	3	3	3	2	2	1
CO-5	3	3	3	1	1	3	3	3	2	1	1

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by : Checked by: Dr.S.Firthous Fatima

Dr.M.Himaya Jaleela Begum Head of the Department

Semester - I	C PROGRAMMING		24UACS11			
EC-I Allied			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objective:

To understand the tools and features of the programming language to design the program and develop the software.

Learning Objectives

LO	The learners will be able to:
LO-1	To familiarize the students with the Programming basics and the fundamentals of C, Datatypes in C, Mathematical and logical operations.
LO-2	To understand the concept using if statements and loops
LO-3	This unit covers the concept of Arrays and Functions
LO-4	This unit covers the concept of Structures and unions and Preprocessors
LO-5	To understand the concept of implementing pointers.

UNIT I - Overview of C: Importance of C -sample C program - C program structure - executing C program - Constants, Variables, and Data Types: Character set - C tokens - keywords and identifiers – constants – variables - data types - declaration of variables - Assigning values to variables- Assignment statement - declaring a variable as constant - as volatile.

Operators and Expression:

Arithmetic – Relational – logical – assignment – increment – decrement – conditional - bitwise and special operators - arithmetic expressions - operator precedence - type conversions - mathematical functions.

Managing Input and Output Operators:

Reading and writing a character - formatted input - formatted output.

UNIT II - Decision Making and Branching:

Decision making with If - simple IF - IF ELSE - nested IF ELSE - ELSE IF ladder – switch - GOTO statement.

Decision Making and Looping:

While - Do-While – For - Jumps in loops.

UNIT III – Arrays:

Declaration and accessing of one & two-dimensional arrays - initializing two-dimensional arrays - multidimensional arrays.

Functions:

The form of C functions - Return values and types - calling a function - categories of functions - Nested functions – Recursion - functions with arrays - call by value, call by reference, storage classes-character arrays and string functions.

UNIT IV –Structures and Unions:

Defining giving values to members - initialization and comparison of structure variables -arrays of structure - arrays within structures - structures within structures - structures and functions - unions.

Preprocessors: Macro substitution - file inclusion.

UNIT V – Pointers:

Definition - declaring and initializing pointers - accessing a variable through address and through pointer - pointer expressions - pointer increments and scale factor - pointers and arrays - pointers and functions - pointers and structures.

Textbooks:

1. Programming in ANSI C, E. Balagurusamy , Tata McGraw-Hill, Fifth Edition, 2010

Reference Books:

1. Byron Gottfried, Schaum's Outline Programming with C, Fourth Edition, Tata McGraw-Hill, 2018.
2. Kernighan and Ritchie, "The C Programming Language", Second Edition, Prentice Hall, 1998.Yashavant Kanetkar," Let Us C", Eighteenth Edition, BPB Publications, 2021.

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Remember the program structure of C with its syntax and semantics	1,2	K2
CO-2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)	1,2	K2
CO-3	Apply the programming principles learnt in real-time problems	1,2,3	K3
CO-4	Analyze the various methods of solving a problem and choose the best method	1,2,3,5	K4
CO-5	Code, debug and test the programs with appropriate test cases	1,3,5	K5

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
I	24UACS11	C PROGRAMMING	60	4

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	2	3	2	3	3	3	3	2	3	2
CO-2	3	3	3	3	3	3	3	3	2	3	2
CO-3	3	2	3	2	3	2	3	3	3	2	2
CO-4	3	2	3	2	3	2	3	3	3	2	3
CO-5	3	1	3	2	3	1	3	2	3	1	3

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by:Mrs.I.Faritha Beevi

Checked by:

Mr.S.M.A. Khaleelur Rahman
Head of the Department

Semester - I	C PROGRAMMING PRACTICAL		24UACS1P			
EC-I Allied-P			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	-	-	2	1

General Objective:

To develop the ability to frame the programs and enrich sufficient knowledge in creating software.

Learning Objectives:

LO	The learners will be able to:
LO-1	To familiarize the students with the Programming basics and the fundamentals of C, Datatypes in C, Mathematical and logical operations.
LO-2	To understand the concept using if statements and loops
LO-3	This unit covers the concept of Arrays and Functions
LO-4	This unit covers the concept of Structures and unions and Preprocessors
LO-5	To understand the concept of implementing pointers.

List of Practical's:

1. Program to print the even numbers from1to100.
2. Program to read three values using scanf statement and print the following results:

a) Sum of the values b) Average of the three values c) Largest of the three

3. Program to read and display the following table of data:

Name	Code	Price
Fan	67831	1234.50
Motor	450	5786.70

The name and code must be left justified and price must be right justified.

4. Program to compute the real roots of a quadratic equation.
5. Program to evaluate the investment equation $V = (1+r)$ and print the tables which would give the value of V for various combination of the following values of P, r and n.
   P : 1000, 2000, . . . , 10000
   r : 0.10,0.11, . . . , 0.20
   n : 1, 2, . . . , 10
6. Program to print all integers that are not divisible by either 2 or 3 and lie between 1 and100 and also should account the number of sets integers and print the result
7. Program to merge two given one dimensional arrays A and B (which are sorted in ascending order) into a single sorted array C which is in ascending order.

8. Program to read a string from the keyboard and determine whether the string is a palindrome or not.
9. Develop a modular interactive program using functions that reads the value of three sides of a triangle and displays either its area or its perimeter as per the request of the user. Given the three sides a, b and c, perimeter = a+b+c and area = $\sqrt{(s-a)(s-b)(s-c)}$ where s= (a+b+c)/2.
10. Develop your own functions for performing following operations in strings.

a) Copying one string to another
b) Comparing two strings
c) Adding a string to the end of another string

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Remember the program structure of C with its syntax and semantics	1,2	K2
CO-2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)	1,2	K2
CO-3	Apply the programming principles learnt in real-time problems	1,2,3	K3
CO-4	Analyze the various methods of solving a problem and choose the best method	1,2,3,5	K4
CO-5	Code, debug and test the programs with appropriate test cases	1,3,5	K5

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
I	24UACS1P	C PROGRAMMING PRACTICAL	30	2

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	3	3	3	3	3	2	3	2
CO-2	3	3	3	2	3	3	3	3	2	2	2
CO-3	3	2	3	2	3	1	3	3	3	2	2
CO-4	3	2	3	1	3	2	3	3	3	1	3
CO-5	3	2	3	2	3	2	3	2	3	2	3

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by:Mrs.I.Faritha Beevi

Checked by:

Mr.S.M.A. Khaleelur Rahman
Head of the Department

Semester - I	Mathematics for Competitive Examination I		24UNMA11			
SEC-I (NME)			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

General Objective:

To help learners make appropriate and realistic career choices and career direction and attend all types of entrance examinations.

Learning Objectives:

LO	The learners will be able to:
LO-1	Find the average of numbers and average speed
LO-2	Apply quantitative techniques to solve a variety of business problems
LO-3	Formulate the statement as algebraic equations and solve them
LO-4	Evaluate result son population and depreciation sing the concept of percentage
LO-5	Find the odd man out in a given series

Unit I: Average

Unit II: Problems on Numbers

Unit III: Problems on ages

Unit IV: Percentage

UnitV: Odd man out and series

Textbook:

Aggarwal R.S., *Quantitative Aptitude*. Published by S.Chand & Co., Ltd., New Delhi, Edition 2011(without data sufficiency questions).

Unit I: Chapter 6

Unit II: Chapter 7

Unit III: Chapter 8

Unit IV: Chapter 10

Unit V: Chapter 35

ReferenceBooks:

1. Gupta R.,*Quantitative Aptitude.* Ramesh Publishing House, Edition 2012.
2. Collins.D.C, Arithmetic in Easy Steps, Samson Publishers, Palayamkottai, Edition 2006.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	CognitiveLevel
CO-1	Recall the essential concepts, formulae, tricks to solve mathematical problems.	K1
CO-2	Take partinmakingreasoned decision and to solve problems.	K4
CO-3	Solve problem son ages	K3
CO-4	Solve logical reasoning questions and answer with explanations.	K3
CO-5	Evaluate the missing term in the series	K5

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Prepared by Name: Dr.N.Mohamed Rilwan

Checked by:
Dr.S. Firthous Fatima
Head of the Department

Semester - I	BRIDGE MATHEMATICS		24UFMA11			
FC			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

General Objective:

1. To bridge the gap and facilitate transition from higher secondary to tertiary education;
2. To instil confidence among stakeholders and inculcate interest for Mathematics;

Learning Objectivies:

LO	The learner will be able to
LO-1	Prove the binomial theorem and apply it to find the expansions of any $(x + y)^n$ and also, solve the related problems
LO-2	Find the various sequences and series and solve the problems related to them. Explain the principle of counting.
LO-3	Find the number of permutations and combinations in different cases. Apply the principle of counting to solve the problems on permutations and combinations
LO-4	Explain various trigonometric ratios and find them for different angles, including sum of the angles, multiple and submultiple angles, etc. Also, they can solve the problems using the transformations.
LO-5	Find the limit and derivative of a function at a point, the definite and indefinite integral of a function. Find the points of min/max of a function.

Unit I:

Algebra: Binomial theorem, General term, middle term, problems based on these concepts

Unit II:

Sequences and series (Progressions). Fundamental principle of counting. Factorial n.

Unit III:

Permutations and combinations, Derivation of formulae and their connections, simple applications, combinations with repetitions, arrangements within groups, formation of groups.

Unit IV:

Trigonometry: Introduction to trigonometric ratios, proof of sin(A+B), cos(A+B), tan(A+B) formulae, multiple and sub multiple angles, sin(2A), cos(2A), tan(2A) etc., transformations sum into product and product into sum formulae, inverse trigonometric functions, sine rule and cosine rule

Unit V:

Calculus: Limits, standard formulae and problems, differentiation, first principle, uv rule, u/v rule, methods of differentiation, application of derivatives, integration - product rule and substitution method.

Text Books:

1. NCERT class XI and XII text books.
2. Any State Board Mathematics text books of class XI and XII

Unit I :TB1 (Vol.I): Chapter 5 Sec - 5.2, 5.3.

Unit II :TB1 (Vol.I): Chapter 5 Sec - 5.4, 5.5 ;Chapter 4 Sec - 4.2, 4.3

Unit III:TB1 (Vol.I): Chapter 4 Sec - 4.4, 4.5

Unit IV:TB1 (Vol.I): Chapter 3 Sec - 3.2, 3.5.1,(with proof identity 3.1, 3.3, 3.5), 3.5.2, 3.5.3

TB2 (Vol.I): Chapter 4 Sec - 4.3 to 4.5

TB1 (Vol.I): Chapter 3 Sec - 3.7

Unit V: TB1 (Vol.I): Chapter 9, Sec - 9.2.3, 9.2.9

Chapter 10, Theorem 10.1, 10.3, 10. Sec - 10.4.2 to 10.4.6

TB2, (Vol.II): Chapter 7, Sec - 7.1, 7.2.2 to 7.2.3

TB1 (Vol.II): Chapter 11, Sec - 11.7.3 to 11.7.5

Reference Books:

1. NCERT Mathematics text books of class XI (Vol.I and II)
2. NCERT Mathematics text books of class XII (Vol.I and II)

Course Outcomes

CO	The learner will be able to	PSOs Addressed	Cognitive level
CO-1	Prove the binomial theorem and apply it to find the expansions of any $(x + y)^n$ and also, solve the related problems	1,2	K3, K4
CO-2	Find the various sequences and series and solve the problems related to them. Explain the principle of counting.	1,2	K3, K5
CO-3	Find the number of permutations and combinations in different cases. Apply the principle of counting to solve the problems on permutations and combinations	1,2	K3, K5
CO-4	Explain various trigonometric ratios and find them for different angles, including sum of the angles, multiple and submultiple angles, etc. Also, they can solve the problems using the transformations.	1,2	K3,K5
CO-5	Find the limit and derivative of a function at a point, the definite and indefinite integral of a function. Find the points of min/max of a function.	1,2	K3

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
I	24UFMA11	BRIDGE MATHEMATICS	30	2

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	1	1	3	3	3	1	2	1
CO-2	3	3	3	2	1	3	3	3	1	1	1
CO-3	3	3	3	1	2	3	3	3	2	1	1
CO-4	3	3	3	2	2	3	3	3	1	1	2
CO-5	3	3	3	1	1	3	3	3	1	2	2

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by Name: Dr.S.Jamal Fathima

Checked by:

Dr.S. Firthous Fatima

Head of the Department

Semester – II	GRAMMAR		24ULAR21			
LANG – I			L	T	P	C
Hrs./Week: 6	Hrs./Semester : 90	Marks :100	6	-	-	3

General Objective: To make the students to develop the skill of basic Arabic Grammar and Translation skills from Arabic to English vice-versa.

Learning Objectives

LO	The learners will be able to:
LO 1	Understand basic Arabic grammar.
LO 2	Understand the correct usage of Arabic grammar.
LO 3	Employ sentence making.
LO 4	Enhance vocabulary.
LO 5	Improve reading and writing skills.

UNIT I - Lessons 1 to 4 (Text Book – 1) من الدرس الأول إلى الدرس الرابع

UNIT II - Lessons 5 to 8 (Text Book – 1) من الدرس الخامس إلى الدرس الثامن

UNIT III – Lessons 9 to 12 (Text Book – 1) من الدرس التاسع إلى الدرس الثاني عشر

UNIT IV – Lessons 13 to 16 (Text Book – 1) من الدرس الثالث عشر إلى الدرس السادس عشر

UNIT V – Lessons 17 to 20 (Text Book – 1) من الدرس السابع عشر إلى الدرس العشرون

Textbooks:

1. قواعد اللغة العربية الأساسية، الدكتور سيد رحمة الله، رئيس سابق لقسم اللغة العربية، الكلية الجديدة، شنائي

Basic Arabic Grammar, By Dr. Syed Rahmathullah

Reference Books:

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

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Able to use basic grammatical structure.	PSO-1,2,4	K2
CO-2	Develop reading skills and reading speed	PSO-1,2	K2
CO-3	Acquire new vocabulary in Arabic	PSO-1,2,3	K3
CO-4	Understand the different types of sentences.	PSO-1,2,3	K4
CO-5	Able to construct simple sentences in Arabic	PSO-1,2,5	K5

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
II	24ULAR21	GRAMMAR	90	3

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	3	2	2	2	2	2	3	2	2	2	1
CO-2	2	2	2	3	1	3	2	2	2	3	1
CO-3	3	3	3	2	2	1	3	3	3	2	2
CO-4	3	3	2	3	3	2	3	3	2	3	3
CO-5	2	2	1	2	3	2	2	2	1	2	3

STRONG – 3, MEDIUM – 2 , LOW – 1

Prepared by : Dr. J. Ubaiyathulla

Checked by: Dr. J. Ubaiyathulla
Head of the Department

Semester - II	பொதுத்தமிழ் - 2		24ULTA21			
LANG – I	தமிழ் இலக்கிய வரலாறு - 2		L	T	P	C
Hrs./Week: 6	Hrs./Semester : 90	Marks :100	6	-	-	3

General Objective:

- தமிழ் இலக்கியப் போக்குகளையும் இலக்கணங்களையும் மாணவர் .
- அறியுமாறு செய்து அவர்களின் படைப்பாற்றலைத் தூண்டுதல்
- தமிழ் இலக்கியம் சார்ந்த போட்டித் தேர்வுகளுக்கு ஏற்ப கற்பித்தல்.
- நடைமுறைகளை மேற்கொள்ளுதல்

Learning Objectives:

LO	The Learners will be able to:
LO - 1	சிற்றிலக்கியங்களின் வழி இலக்கியச் சுவையினையும் பண்பாட்டு அறிவினையும் பெறுதல்
LO - 2	புதுக்கவிதை வரலாற்றினை அறிந்து கொள்வர்
LO - 3	திராவிட இயக்க இலக்கியங்களைக் கற்பதன் மூலம் மொழி உணர்வு , இன உணர்வு, சமத்துவம் சார்ந்த சிந்தனைகளை ஊட்டுதல்
LO - 4	தமிழ்மொழியைப் பிழையின்றி எழுதவும், புதிய கலைச்சொற்களை உருவாக்கவும் அறிந்து கொள்ளுதல்
LO - 5	போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்குத் தமிழ்ப் பாடத்தினைப் பயன்கொள்ளும் வகையில் மேடைப்பேச்சு மற்றும் கட்டுரை, கதை எழுதுவதற்கு பயிற்சி பெறுதல்.

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 சிற்றிலக்கியமும் தனிப்பாடலும்

சிற்றிலக்கியம்

1. கலிங்கத்துப் பரணி- விருந்தினரும் வறியவரு நெருங்கி யுண்ணரும் - முதல் - கேட்பாரைக் காண்மின் காண்மின் வரை.
2. திருக்குற்றாலக் குறவஞ்சி - வானரங்கள் கனிகொடுத்து.
3. முக்கூடற் பள்ளு - ஆற்று வெள்ளம் நாளை வரத்.
4. அபிராமி அந்தாதி- கலையாத கல்வியும் குறையாத வயதும் (பதினாறு செல்வங்கள்).
5. திருவரங்கக் கலம்பகம் – மறம் -பிள்ளைப் பெருமாள் ஐயங்கார்- பேசவந்த தூத செல்லரித்த ஓலை செல்லுமோ.

6. தமிழ்விடு தூது முதல் பத்து கண்ணிகள்

தனிப்பாடல்

1. வான்குருவியின் கூடு - ஔவையார்
2. ஆமணக்குக்கும் யானைக்கும் சிலேடை - முத்திருக்கும் கொம்பசைக்கும் மூரித்தண்டே - காளமேகப் புலவர்
3. இம்பர் வான் எல்லை இராமனையே பாடி - வீரராகவர்
4. 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

ரகர – றகர வேறுபாடுகள்

நகர – ணகர – னகர வேறுபாடுகள்

லகர – ளகர – ழகர வேறுபாடுகள்

பாட நூல்:

பதிப்பாசிரியர் முனைவர் ச.மகாதேவன், பொதுத்தமிழ் 2,
சதக்கத்துல்லாஹ் அப்பா கல்லூரி வெளியீடு 2024 – 2025(முதற் பதிப்பு).

பார்வை நூல்கள் :

1. மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அகாதெமி, புதுடெல்லி.
2. மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
3. தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
4. தமிழ் இலக்கிய வரலாறு – முனைவர்.சிற்பி பாலசுப்ரமணியம், முனைவர்.சொ.சேதுபதி
5. புதிய தமிழ் இலக்கிய வரலாறு – முனைவர்.சிற்பி பாலசுப்ரமணியம், நீல.பத்மநாபன்
6. தமிழ் இலக்கிய வரலாறு - டாக்டர்.அ.கா.பெருமாள்
7. தமிழ் இலக்கிய வரலாறு - முனைவர். ப.ச.ஏசுதாசன்
8. தமிழ் இலக்கிய வரலாறு – ஸ்ரீகுமார்
9. வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு – பாக்கியமேரி.
10. தமிழ் பயிற்றும் முறை, பேராசிரியர் ந. சுப்புரெட்டியார் - மணிவாசகர் பதிப்பகம், சிதம்பரம்

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

Course Outcomes

CO	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	சிற்றிலக்கியங்களின்வழி இலக்கியச் சுவையினையும் பண்பாட்டு அறிவினையும் பெறுவர்	2,4	K2, K3
CO-2	புதுக்கவிதை வரலாற்றினை அறிந்து கொள்வர்	1,4	K2
CO-3	திராவிட இயக்க இலக்கியங்களைக் கற்பதன் மூலம் மொழி உணர்வு, இன உணர்வு, சமத்துவம் சார்ந்த சிந்தனைகளைப் பெறுவர்	2,4,5	K4,K5
CO-4	தமிழ்மொழியைப் பிழையின்றி எழுதவும், புதிய கலைச்சொற்களை உருவாக்கவும் அறிந்து கொள்வர்	1,3	K3,K6
CO-5	போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்குத் தமிழ்ப் பாடத்தினைப் பயன்கொள்ளும் வகையில் மேடைப்பேச்சு மற்றும் கட்டுரை, கதை எழுதுவதற்கு பயிற்சி பெறுவர் பயிற்சி பெறுவர்.	1,2,3,4	K4, K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credits
II	24ULTA21	தமிழ் இலக்கிய வரலாறு - 2	90	3

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	2	3	3	3	2	2	2	3	2	3
CO-2	3	3	2	2	2	3	2	3	3	2	2
CO-3	3	2	3	3	2	2	2	3	2	3	3
CO-4	3	3	3	2	2	2	3	2	3	2	2
CO-5	3	3	2	2	2	3	3	2	2	2	2

3 - STRONG, 2 - MEDIUM, 1- LOW

Prepared by : Dr. A.S. Shaik Sindha

Checked by: Dr.S.Mahadevan
Head of the Department

Semester - II	General English-II		24ULEN21			
LANG – II			L	T	P	C
Hrs./Week: 6	Hrs./Semester : 90	Marks :100	6	-	-	3

General Objective:

To teach the four skills viz. Listening, Speaking, Reading and Writing to train the students the skills necessary for social and academic interactions.

Learning Objectives (LO)

LO	The learners will be able to:
LO-1	To make students realize the importance of resilience
LO-2	To enable them to become good decision makers
LO-3	To enable them to develop problem-solving skills
LO-4	To enable them to use tenses appropriately
LO-5	To help them use English effectively at workplace.

Unit – I

The Skill Focussed: Resilience

Poetry

1. "Don't Quit" – Edgar A. Guest
2. "Still Here" – Langston Hughes

Short Story

3 Engine Trouble – R.K. Narayan

4 Rip Van Winkle – Washington Irving

Unit – II

The Skill Focussed: Decision Making

Short Story

1. The Scribe – Kristin Hunter
2. The Lady or the Tiger - Frank Stockton

Poetry

3. "The Road not Taken" – Robert Frost
4. "Snake" – D. H Lawrence

Unit – III

The Skill Focussed: Problem Solving

Autobiography

1. How I taught My Grandmother to Read – Sudha Murthy
2. How Frog Went to Heaven – A Tale of Angolo
3. Wings of Fire (Chapters 1,2,3) by A.P.J Abdul Kalam

Unit – IV

Grammar

Tenses

1. Present
2. Past
3. Future
4. Concord

Unit - V

English in the Workplace

1.e-mail – Invitation, Enquiry, Seeking Clarification

2. Circular
3. Memo
4. Minutes of the Meeting

Textbook:

1. Board of Editors. General English – II. Tamil Nadu State Council for Higher Education (TANSCHE). Chennai: 2024.

Reference 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. ShaikhMoula, *Communication Skills: A Practical Approached*.
6. Ramendra Kumar, *Stories of Resilience*, Blue Rose Publications, 2020.

Course Outcomes

CO	Upon completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO-1	Understand the importance of resilience	1, 2, 4	K1, K2
CO-2	Acquire knowledge to make good decisions	1, 2, 3, 4	K2, K3
CO-3	Develop problem-solving skills	1, 2, 3, 4	K3, K4
CO-4	Evaluate the uses of tenses in English	1, 2, 3	K4, K5
CO-5	Use English effectively at the workplace.	2, 4, 5	K5, K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code			Title of the Course			Hours		Credits		
II	24ULEN21			General English - II			90		3		
Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	1	3	1		1	3	3	3	1
CO-2	3	3	3	3	2		3	3	3	3	2
CO-3	3	3	3	3	1		3	3	3	3	1
CO-4	3	3	3	2	1		3	3	3	1	2
CO-5	1	3	2	3	3		3	3	3	3	3
	STRONG – 3, MEDIUM – 2 , LOW – 1										

Prepared by : Dr.L.Faustina Leo Checked by: Dr. S. Mohamed Haneef

Head of the Department

Semester - II	ANALYTICAL GEOMETRY (2D & 3D)		24UCMA21			
Core-III			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4			4

General Objective:

1. Necessary skills to analyze characteristics and properties of two and three dimensional geometric shapes.
2. To present mathematical arguments about geometric relationships.
3. To solve real world problems on geometry and its application.

Learning Objectives:

LO	The learners will be able to:
LO-1	Find pole, polar for conics, diameters, conjugate diameters for ellipse and hyperbola
LO-2	Acquire and apply the knowledge of finding the equation of polar equations of straight line and circle, equations of chord, tangent and normal and to find the asymptotes of hyperbola
LO-3	Explain in detail the system of Planes
LO-4	Measure the distances between two lines, planes and find the angle between the planes
LO-5	Construct the equation of sphere and also form a sphere by intersection of two spheres.

UNIT-I: Pole, Polar - conjugate points and conjugate lines – diameters – conjugate diameters of an ellipse - semi diameters- conjugate diameters of hyperbola.

UNIT-II: Polar coordinates: General polar equation of straight line – Polar equation of a circle given a diameter, Equation of a straight line, circle, conic – Equation of chord, tangent, normal.

UNIT-III: System of Planes-Length of the perpendicular–Orthogonal projection.

UNIT-IV: Representation of line–angle between a line and a plane – coplanar lines–shortest distance between two skew lines –length of the perpendicular.

UNIT-V: Equation of a sphere-general equation-section of a sphere by a plane-equation of the circle- tangent plane- angle of intersection of two spheres- condition for the orthogonality- radical plane

Text Books:

1. T.K. Manicavachagam Pillay & T. Natarajan, Analytical geometry (Part-I – Two dimensions), S. Viswanathan (Printers and Publishers) Pvt. Ltd. (2012).
2. T.K. Manicavachagam Pillay & T. Natarajan, Analytical geometry (Part-II – Three dimensions), S. Viswanathan (Printers and Publishers) Pvt. Ltd. (2012).

Unit-I: TB1: Chapter VII: 225-233, 262- 274; Chapter VIII : 305- 308

Unit II: TB1: Chapter IX: 325 -366

Unit-III: TB2: Chapter II- 24-45

Unit-IV: TB2: Chapter III : 46-75

Unit-V: TB2: Chapter IV: 92-114

Reference Books:

1. Arumugam S and Isaac. *Analytical Geometry 3–D & Vector Calculus*. New Gamma Publication House, Palayamkottai Edition 2011.
2. Stephen John. B, *Analytical geometry of 3D and vector differentiation*, Ideal publication, Martha damaged, Edition 2008
3. Calculus and Analytical Geometry, G.B. Thomas and R. L. Finny, Pearson Publication, 9th Edition, 2010.
4. Robert C. Yates, Analytic Geometry with Calculus, Prentice Hall, Inc., New York, 1961.
5. Earl W. Swokowski and Jeffery A. Cole, Algebra and Trigonometry with Analytic Geometry, Twelfth Edition, Brooks/Cole, Cengage Learning, CA, USA, 2010.
6. William H. McCrea, Analytical Geometry of Three Dimensions, Dover Publications, Inc, New York, 2006.
7. John F. Randelph, Calculus and Analytic Geometry, Wadsworth Publishing Company, CA, USA, 1969.

8. Ralph Palmer Agnew, Analytic Geometry and Calculus with Vectors, McGraw-Hill Book Company, Inc. New York, 1962.

Course Outcomes:

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Find pole, polar for conics, diameters, conjugate diameters for ellipse and hyperbola	1, 2	K2,K3
CO-2	Acquire and apply the knowledge of finding the equation of polar equations of straight line and circle, equations of chord, tangent and normal and to find the asymptotes of hyperbola	1, 2	K2,K3
CO-3	Explain in detail the system of Planes	1, 2	K4
CO-4	Measure the distances between two lines, planes and find the angle between the planes	1, 2	K3,K5
CO-5	Construct the equation of sphere and also form a sphere by intersection of two spheres.	1, 2	K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

RELATIONSHIP MATRIX

SEMESTER	COURSE CODE	TITLE OF THE COURSE	HOURS	CREDIT
II	**24UCMA21**	**ANALYTICAL GEOMETRY (Two & Three Dimensions)**	**60**	**4**

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	2	2	3	3	3	2	1	1
CO-2	3	3	3	1	2	3	3	3	1	1	1
CO-3	3	3	3	1	2	3	3	3	2	1	1
CO-4	3	3	3	1	1	3	3	3	1	2	2
CO-5	3	3	3	1	2	3	3	3	2	1	1

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by: Dr.S. Firthous Fatima Checked by:Dr.S. Firthous Fatima

Head of the Department

Semester - II	Integral Calculus		24UCMA22			
Core-IV			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objective:

- To impart the knowledge of integration.
- To provide the students with the fundamental concepts, underlying principles, various mathematical techniques and methods such as Beta and Gamma functions to evaluate complicated integrals.

Learning Objectives:

LO	The learners will be able to:
LO-1	Understand the integration of product of powers of algebraic and logarithmic functions.
LO-2	Find the solution of double integrals in polar coordinates.
LO-3	Study the Inter-relationship among the area and volume of surfaces.
LO-4	Evaluate Beta and Gamma functions.
LO-5	Relate the Geometric and Physical Applications of Integrals.

Unit I - Reduction formulae -Types, integration of product of powers of algebraic and trigonometric functions, integration of product of powers of algebraic and logarithmic functions - Bernoulli's formula.

Unit II - Multiple Integrals - definition of double integrals - evaluation of double integrals – double integrals in polar coordinates - Change of order of integration.

Unit III - Triple integrals –applications of multiple integrals - volumes of solids of revolution - areas of curved surfaces–change of variables - Jacobian.

Unit IV – Beta and Gamma functions – infinite integral - definitions– recurrence formula of Gamma functions – properties of Beta and Gamma functions- relation between Beta and Gamma functions - Applications.

Unit V – Geometric and Physical Applications of Integral calculus.

TEXT BOOKS:

1. S.Narayanaqn,T.K. Manicavachagam Pillay, Calculus Vol II, S.Viswanathan (Printers and Publishers) Pvt. Ltd. (2009).

Unit-I:Chapter 1-Sections 13 & 14 and 15.1

Unit-II:Chapter 5-Sections 1,2.1,2.2 & 3.1

Unit-III:Chapter 5-Sections 4,5.1,5.2,5.3,6.1,7 and
Chapter 6-Sections 1.1,1.2

Unit-IV:Chapter 7-Sections 2.1,2.2,2.3,3,4 & 6

Unit-V:Chapter 2-Sections 1.1 to 1.4,2.1,2.2 and
Chapter 3-Sections 1.1 to 1.5 Simple applications

REFERENCE BOOK

1. S.Arumugam & A.Thangapandi Issac, Calculus, New Gamma Publishing House, Palayamkottai. (2011).
2. H. Anton, I.Birensand S. Davis, Calculus, John Wiley and Sons, Inc., 2002.
3. G.B.Thomas and R.L. Finney, Calculus, Pearson Education, 2007.
4. D.Chatterjee, Integral Calculus and Differential Equations, Tata-McGraw Hill Publishing Company Ltd.
5. P.Dyke, An Introduction to Laplace Transforms and Fourier Series, Springer Undergraduate Mathematics Series, 2001 (Second edition).

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CLO-1	Determine the integrals of algebraic, trigonometric and logarithmic functions and to find the reduction formulae.	1,2	K3
CLO-2	Evaluate double and triple integrals and problems using change of order of integration.	1,2	K2,K3
CLO-3	Solve multiple integrals and to find the areas of curved surfaces and volumes of solids of revolution.	1,2	K3
CLO-4	Explain beta and gamma functions and to use them in solving problems of integration.	1,2	K5
CLO-5	Explain Geometric and Physical applications of integral calculus.	1,2	K3,K4

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

SEMESTER	COURSE CODE	TITLE OF THE COURSE	HOURS	CREDITS
II	24UCMA22	Integral Calculus	60	4

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	2	1	3	3	3	2	1	1
CO-2	3	3	3	1	1	3	3	3	1	1	1
CO-3	3	3	3	2	2	3	3	3	2	1	1
CO-4	3	3	3	1	1	3	3	3	1	2	1
CO-5	3	3	3	1	2	3	3	3	2	1	2

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by: Dr.M.Himaya Jaleela Begum

Checked by:

Dr.S. Firthous Fatima

Head of the Department

Semester - II	C++ Programming		24UACS21			
EC-II-Allied			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objective:

C++ improves the concept of Object-Oriented features and equips knowledge in creating this Language's Syntax and semantics.

Learning Objectives

LO	The learners will be able to:
LO-1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
LO-2	Understand dynamic memory management techniques using pointers, constructors, destructors, etc
LO-3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
LO-4	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
LO-5	Demonstrate the use of various OOPs concepts with the help of programs

UNIT I - Introduction to C++ - key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures: - Decision Making and Statements: If ..else, jump, goto, break, continue, Switch case statements - Loops in C++ :for, while, do - functions in C++ - inline functions – Function Overloading.

UNIT II - Classes and Objects: Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.

UNIT III –Operator Overloading: Overloading unary, binary operators – Overloading Friend functions –type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

UNIT IV –Pointers – Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics –

array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.

UNIT V –Files – File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling - String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions.

Textbooks:

1 E. Balagurusamy, "Object-Oriented Programming with C++", TMH 2013, 7th Edition.

Reference Books:

1. Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++",Pearson Education 2003.
2. Maria Litvin& Gray Litvin, "C++ for you", Vikas publication 2002.

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Remember the program structure of C with its syntax and semantics	1,2	K2
CO-2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)	1,2,3	K2
CO-3	Apply the programming principles learnt in real-time problems	1,2,3	K3
CO-4	Analyze the various methods of solving a problem and choose the best method	1,2,3,4	K4
CO-5	Code, debug and test the programs with appropriate test cases	1,2,3,4,5	K3,K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credits			
II	24UACS21	C++ Programming					60	4			
Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	2	3	2	3	2	3	3	2	2	2
CO-2	3	3	3	3	3	3	3	3	3	2	3
CO-3	3	2	3	2	3	2	3	3	3	1	2
CO-4	3	2	3	2	3	1	3	3	3	3	2
CO-5	3	3	3	1	3	2	3	3	3	3	3

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by:Mrs.I.Faritha Beevi

Checked by:

Mr.S.M.A. Khaleelur Rahman
Head of the Department

Semester - II	C++ Programming Practical		24UACS2P			
EC-II-Allied-P			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	-	-	2	1

General Objective:

Improve the knowledge in the programming style and reliability. Practice the use of C++ classes and class libraries, arrays, inheritance, and file I/O stream concepts.

Learning Objectives:

LO	The learners will be able to:
LO-1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
LO-2	Understand dynamic memory management techniques using pointers, constructors, destructors, etc
LO-3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
LO-4	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
LO-5	Demonstrate the use of various OOPs concepts with the help of programs

1. Write a C++ program to demonstrate function overloading, Default Arguments and Inline function.
2. Write a C++ program to demonstrate Class and Objects
3. Write a C++ program to demonstrate the concept of Passing Objects to Functions
4. Write a C++ program to demonstrate the Friend Functions.
5. Write a C++ program to demonstrate the concept of Passing Objects to Functions
6. Write a C++ program to demonstrate Constructor and Destructor
7. Write a C++ program to demonstrate Unary Operator Overloading
8. Write a C++ program to demonstrate Binary Operator Overloading

. 9. Write a C++ program to demonstrate:

- Single Inheritance
- Multilevel Inheritance
- Multiple Inheritance
- Hierarchical Inheritance
- Hybrid Inheritance

10. Write a C++ program to demonstrate Virtual Functions.
11. Write a C++ program to manipulate a Text File.
12. Write a C++ program to perform Sequential I/O Operations on a file.
13. Write a C++ program to find the Biggest Number using Command Line Arguments
14. Write a C++ program to demonstrate Class Template
15. Write a C++ program to demonstrate Function Template.
16. Write a C++ program to demonstrate Exception Handling.

Textbooks:

1 E. Balagurusamy, "Object-Oriented Programming with C++", TMH 2013, 7th Edition.

Reference Books:

1.Ashok N Kamthane, "Object-Oriented Programming with ANSI and Turbo C++",Pearson Education 2003.
2. Maria Litvin& Gray Litvin, "C++ for you", Vikas publication 2002.

Course Outcomes

CO	Upon completion of this course, students would have learned to:	PSOs Addressed	Cognitive Level
CO-1	Apply the concepts of classes, objects and inline function	1,3	K2
CO-2	Develop program using data types, operators, branching and looping, arrays, functions, structures, pointers and files	1,3,4	K2
CO-3	Apply function and overloading concepts	1,2,3	K3
CO-4	Implement inheritance concepts	1,2,3,5	K3,K4
CO-5	Implement virtual function, exception handling and files	1,5	K6

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 – Creating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credit
II	24UACS2P	C++ Programming Practical	30	1

Course Outcomes (COs)	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)				
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	3	3	3	2	3	3	3	2	3	2	3
CO-2	3	2	3	3	3	2	3	2	3	3	2
CO-3	3	2	3	2	3	2	3	3	3	2	2
CO-4	3	2	3	2	3	2	3	3	3	2	3
CO-5	3	1	3	1	3	2	3	2	2	2	3

STRONG (3), MEDIUM (2) and LOW (1)

Prepared by:Mrs.I.Faritha Beevi

Checked by:

Mr.S.M.A. Khaleelur Rahman
Head of the Department

Semester - II	Mathematics for Competitive Examination II		24UNMA21			
SEC-II (NME)			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

General Objective:

To help learners make appropriate and realistic career choices and career direction and attend all types of entrance examinations.

Learning Objectives:

LO	The learners will be able to:
LO-1	Provide trading results by ascertaining net profit or net loss of the given data
LO-2	Identify with ease all types of questions and solve problems in entrance examinations.
LO-3	Find results on population and depreciation using the concep to percentage
LO-4	Evaluate simple interest using the simple interest formula
LO-5	Estimate the compound amount by using the compound interest formula

Unit I: Profit and Loss

Unit II: Ratio and Proportion

Unit III: Time and Work

Unit IV: Simple Interest

Unit V : Compound Interest

Textbook:

Aggarwal R.S.,*Quantitative Aptitude* published by S.Chand & Co.,Ltd.,New Delhi, Edition 2011(without data sufficiency questions).

Unit I: Chapter 11

Unit II: Chapter 12

Unit III: Chapter 15

Unit IV: Chapter 21

Unit V: Chapter 22

Reference Books:

1. Gupta R. *Quantitative Aptitude*. Ramesh Publishing House, Edition 2012.
2. Collins.D.C, Arithmetic in Easy Steps, Samson Publishers, Palayamkottai, Edition 2006.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	Cognitive Level
CO-1	Analyze the positions that require numbers ensein profit and loss.	K4
CO-2	Apply ratios and proportions to solve real-life problems	K3
CO-3	Find the time taken by an individual and a group of individuals to complete a piece of work	K2
CO-4	Explain the concept of simple and compound interests and the concep to the time value of money, present value and future value	K5
CO-5	Evaluate compound interest.	K5

K1-Remembering; K2 – Understanding; K3 - Applying; K4 - Analyzing; K5 – Evaluating; K6 - Creating

Prepared by: Dr.N.Mohamed Rilwan

Checked by:
Dr.S. Firthous Fatima
Head of the Department

Semester – II	Value Education-I		24USVE2A			
SEC-III			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

General Objective: To make students inculcate moral values, leading to faith and righteous action in their life.

Unit – I: Islam – Meaning – Importance – A complete Religion – The religion accepted by God – Five Pillars of Islam – Kalima – Prayers – Fasting – Zakat – Haj.

Iman – Monotheism – Angels – Books – Prophets – Dooms Day – Life after death – Heaven and Hell.

Unit – II: Quran – The Book of Allah – Wahi – Revelation to Prophet Muhammad(sal) – Compilation – Preservance – Structure – Content – Purpose – Source of Islamic Law– SuraFathiha, Kafirun, Iqlas, Falakh and Nas.

Unit – III: Hadith – Siha Sitha – Buhari – Muslim – Tirmithi – Abu Dawood – Nasai – Ibn Maja – Collection of Hadith – Meaning of 40 Hadith.

Unit – IV: Life History of Prophet Muhammad (sal) – AiamulJahiliya – Prophet's Childhood and Marriage – Prophethood – Life at Mecca – Life at Medinah – Farewell Address – Seal of Prophethood.

Unit – V: Good character – Etiquettes – Halal and Haram – Duties towards Allah – Duties towards fellow beings – MasnoonDuas.

Textbooks:

Publication of SadakathullahAppa College

Reference Books:

1. V.A. Moahmed Ashrof – Islamic Dimensions – Reflection and Review on Quranic Themes.
2. The Presidency of Islamic Researchers – Revised & Edited – The Holy Quran.
3. M. Manzoor Nomani – Islamic Faith & Practice.
4. Ali Nadawi, Abul Hasan– Muhammad Rasulullah., Muassasathus Sahafawa Nashr Publication Lucknow, India,1999.
5. K. Ali – A Study of Islamic History.
6. Abdul Rahuman Abdulla
   h – Islamic Dress code for Women.
7. Dr. Munir Ahamed Mughal – Code For Believers.
8. Abdul Malik Mujahid – Gems and Jewels.

Semester – II	Value Education-II		24USVE2B			
SEC-III			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

UNIT I

Individual Morality – Objective of Moral life – Living in accordance with the code of Morality – the goodness of Morality – Morality and *Thirukural*- The need for faith.

UNIT II

Adherence to higher code of Morality – Fear of God – Good Moral Values – Duty to Parents – Teacher, respecting elders – Moral Etiquettes – Right-minded Principle – High Principles for Proper conduct.

UNIT III

Inculcating good attitudes – Open mindedness – Morale – analysing the pros and cons of good and bad – Service to others – Mind Power, tolerance, respecting others, showing love to others, patience – tranquility – Modesty, kindness and forgiveness.

UNIT IV

Quotations and moral Stories expressing Good characters of Great personalities – Life History of Great people: Mahatma Gandhi, Abraham Lincoln, Dr. A.P.J. Abdul Kalam.

UNIT V

Truth, the importance of uprightness, integrity, friendship – Health awareness on Alcohol and drug abuse – inculcating reading habit – reading good books – Hygiene – Dowry – Corruption.

Textbooks:

Publication of Sadakathullah Appa College.