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 NUTRITION AND DIETETICS

CBCS SYLLABUS

Learning Outcome-based Curriculum Framework for

NUTRITION AND DIETETICS (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 (Sciences)*
2024 – 2027
NUTRITION AND DIETETICS

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	Human Physiology	24UCND11	5	5	25	75	100
	III	Core-P-I	Human Physiology Practical's	24UCND1P	3	3	40	60	100
	III	EC-T-I (GE)	Chemistry for Biological Science-I	24UACH11	4	4	25	75	100
	III	EC-P-I (GE)	Chemistry Practical for Biological Sciences-I	24UACH1P	2	1	20	30	50
	IV	SEC-I (NME)	Basic Food Science	24UNND11	2	2	15	35	50
	IV	FC	Sports Nutrition	24UFND11	2	2	15	35	50
					30	**23**			**650**
II	I	Lang-I	Grammar	24ULAR21	6	3	25	75	100
			பொதுத் தமிழ் II - தமிழ் இலக்கிய வரலாறு - 2	24ULTA21					
	II	Lang-II	General English - II	24ULEN21	6	3	25	75	100
	III	Core-II	Food Science	24UCND21	5	5	25	75	100
	III	Core-P-II	Basic Cookery Practicals	24UCND2P	3	3	40	60	100
	III	EC-T-II (GE)	Chemistry for Biological Science-II	24UACH21	4	4	25	75	100
	III	EC-P-II (GE)	Chemistry Practical for Biological Sciences-II	24UACH2P	2	1	20	30	50
	IV	SEC-II (NME)	Basic Nutrition	24UNND21	2	2	15	35	50
	IV	SEC-III	Value Education –I	24USVE2A	2	2	15	35	50
			Value Education –II	24USVE2B					
					30	**23**			**650**

Programme Outcomes (PO)
(Aligned with Graduate Attributes) for B.Sc.

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.

Department of Nutrition and DieteticsProgramme: B.Sc.

PROGRAMME SPECIFIC OUTCOMES

PSO	Upon completion of B.Sc. Nutrition And Dietetics Degree Programme, the students will be able to:	POs Mapped
PSO - 1	Understand the fundamental concepts and principles relating to Nutrition and Dietetics	**PO-1**
PSO - 2	Acquire practical skills to analyze and interpret nutrients quantitatively and qualitatively	**PO-2**
PSO - 3	Plan a diet as a team, prepare and evaluate the nutrient content in the diet designed and present the results effectively	**PO-3**
PSO - 4	Identify food adulterants to ensure food safety and quality food purchase and learn the effective utilization of food leftovers and biodegradable packaging	**PO-4**
PSO - 5	Learn lifelong independently through the effective adoption of ICT to update knowledge in emerging areas and to enhance necessary aptitude and confidence to become professionals in various fields	**PO-5**

Semester - I	PROSE		24ULAR11			
LANG – 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			
LANG – 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, அஃது 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)
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	HUMAN PHYSIOLOGY		24UCND11			
Core – I			L	T	P	C
Hrs./Week: 5	Hrs./Semester : 75	Marks :100	5	-	-	5

GENERAL OBJECTIVES

To acquire knowledge on different organs of the human body and its structure, function and working mechanism.

LEARNING OBJECTIVES

LO	The learners will be able to
LO-1	Understand then basic concept of cells
LO-2	Learn the working process of different human organs and blood
LO-3	Acquire known knowledge on immunity
LO-4	Evaluate the process how respiration occurs in humans
LO-5	Gain knowledge on different glands and reproductive structures

UNIT: 1 CELL AND TISSUES

Cell- Structure of organs and functions. Tissues – Structure, Classification and functions.

UNIT: 2 BLOOD AND GASTRO INTESTINAL SYSTEM

Blood-Composition, functions, coagulation, factors affecting coagulation, blood groups. Gastrointestinal and Hepatobiliary system – Structure, physiology and functions of different organs and role of hormones and enzymes.

UNIT: 3 IMMUNE SYSTEM AND CIRCULATORY SYSTEM

Immune system – Innate, acquired and active immunity, cell mediated immunity, humoral immunity and complement system. Heart and circulation – Structure, cardiac cycle, cardiac output, factors affecting cardiac output, normal ECG, heart failure, blood pressure, control and factors affecting blood pressure.

UNIT: 4 RESPIRATORY SYSTEM AND URINARY SYSTEM

Respiratory system – Structure and functions, Lung volumes and lung capacities, Factors affecting efficacy of respiration. Excretory system **(A) Urinary System**: -Structure and functions of organs of urinary system (In

brief), Mechanism of urine formation. **(B)Skin**: - Structure and functions, Regulation of body temperature.

UNIT: 5 REPRODUCTIVE SYSYTEM AND ENDOCRINE SYSTEM

Reproductive system– Female reproductive system-Structure and functions, menstrual cycle, menarche and menopause. Male Reproductive system-Structure and functions. Endocrine system-Thyroid, Parathyroid, Adrenal gland, Pituitary and Sex glands – Structure and functions.

REFERENCES

1. Chatterjee C.C (2004), Human Physiology Volume II, Medical Allied Agency, Kolkata.
2. Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata.
3. Chaudhri, K.(1993)Concise Medical Physiology, New Central Book Agency (Parentral) Ltd., Calcutta.
4. Gyton (1996). Test Book of Medical Physiology, 9th Edition, Prism Books Pvt. Ltd.,W.B. Sanders Company, USA.
5. Rossand Wilson (2011). Anatomy and physiology in Health and Illness, 11th Edition, Church Hill Livingstone.
6. Sembulingam, K.(2000). Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi.
7. West, J.B. (2007), Best and Taylor's Physiological Basis of Medical Practice,11thEdition.

COURSE OUTCOME

CO	Up on completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Describe and understand the insight of normal functioning of all the organs stems of the body and their interaction. Understand the current state of knowledge about the functional organization of Human Cell and Histology	1	K1
CO-2	Determine the structural and functional organization of Blood and Gastro intestinal tract	1,3	K2
CO-3	Discover the structural and functional organization of Immunity and circulatory system	1,5	K6
CO-4	Assess the structural and functional organization of respiratory system	1,3	K4
CO-5	Describe and understand the insight of normal functioning of all the organs stems of the body and their interaction. Understand the current state of knowledge about the functional organization of Human Cell and Histology	1	K2

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

RELATIONSHIP MATRIX

Semester	Course Code	Title of the Course				Hours				Credits
I	24UCND11	Human Physiology				75				5
Course Outcome (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	1	1	1	3	-	3	1	1	3
CO-2	3	3	3	1	1	-	-	3	-	2	3
CO-3	2	3	3	3	3	3	2	2	2	3	2
CO-4	3	3	2	2	-	-	3	2	2	3	3
CO-5	-	3	3	3	3	-	-	3	2	3	-
	Strong-3 Medium-2 Low-1										

Prepared by

Mrs. C.Aruna Sundari

Checked by : Mr. S.M. Prasad

Head of the Department

Semester - I	HUMAN PHYSIOLOGY PRACTICALS		24UCND1P			
Core – IP			L	T	P	C
Hrs./Week: 3	Hrs./Semester : 45	Marks :100	-	-	3	3

GENERAL OBJECTIVES

To understand the basic practical exposure on chemical examination, blood grouping and learning microscopic structure of various human body organs

LEARNING OBJECTIVES

LO	The learners will be able to
LO-1	Understand the microscopic structure of epithelial, connective and muscular tissues
LO-2	Determining the basic experiment carried out in blood
LO-3	Analyze the study of pulse rate
LO-4	Learn to measure BP using sphygmomanometer
LO-5	Identify the various glands and reproductive organs

UNIT : 1 CELLS AND TISSUES

1. Microscopic study of tissues- epithelial, connective and muscular.

UNIT : 2 BLOOD AND GASTRO INTESTINAL SYSTEM

1. Estimation of hemoglobin -Sahli's Acidhematin method.
2. Determination of Hematocrit (Wintrobe method).
3. Preparation and examination of stained blood smear (Wedge or glass slide method).
4. Determination of Erythrocyte Sedimentation Rate (Wintrobe method).
5. Determination of blood group.
6. Determination of bleeding time (Duke method) and coagulation time (Capillary tube method).
7. Platelet count (Rees Ecker method by hemocytometry).
8. Microscopic structure of digestive system

UNIT : 3 IMMUNE SYSTEM AND CIRCULATORY SYSTEM

1. Microscopic structure of heart
2. Clinical examination of radial pulse (pulse rate).

UNIT : 4 RESPIRATORY SYSTEM AND URINARY SYSTEM

1. Measurement of blood pressure (Sphygmomanometer).
2. Effect of exercise on blood pressure and heart rate.

UNIT : 5 REPRODUCTIVE SYSYTEM AND ENDOCRINE SYSTEM

1. Microscopic structure of kidney
2. Microscopic structure of endocrine glands -thyroid, pituitary and adrenal.
3. Microscopic structure of reproductive organs- ovary, uterus, mammary glands and testis.

REFERENCES

1. Stuart Fox 2018. Human Physiology: Laboratory Manual .McGraw-Hill Education15th. ISBN: 978-1259880346
2. Connie Allen, Valerie Harper 2019. Laboratory Manual for Anatomy and Physiology. Wiley Edition: 7th. ISBN: 978-1119662557

LEARNING RESOURCES

1. **https://www.khanacademy .org/science/health-and-medicine/human-anatomy-and-physiology**
3. **https://www.physiologyweb.com/figures/index.html**
4. **www.google.com**

COURSE OUTCOME

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Illustrate the microscopic study of cells and tissues	1,5	K2
CO-2	Determining the blood group and bleeding time	1,5	K3
CO-3	Measure the clinical examination of pulse	1	K3
CO-4	Analyse the effect of blood pressure and heart rate	1,5	K4
CO-5	Discover the microscopic structure of reproductive organ and endocrine glands	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	24UCND1P			Human Physiology Practical's			3	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
LO-1	3	2	1	1	1	3	3	1	-	-	3
LO-2	3	3	3	1	1	-	3	1	-	-	3
LO-3	2	3	3	3	3	3	3	1	-	-	2
LO-4	3	2	1	1	1	3	3	1	-	-	3
LO-5	3	3	3	1	1	-	3	1	-	-	3
	Strong-3 Medium-2 Low-1										

Prepared by

Dr.S.Rama Jeba

Checked by : Mr. S.M. Prasad

Head of the Department

Semester - I	Chemistry for Biological Science-I		24UACH11			
EC-I-Allied			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objectives:

This course focusses on atomic orbitals, chemical bonds, hybridization, fundamentals of organic chemistry, nuclear chemistry, industrial chemistry, importance of drugs, separation and purification techniques.

Learning Objectives:

The learner will be able to,

LOs	Learning Objectives
LO-1	Gain knowledge about theories of chemical bonding, nuclear reactions and its applications.
LO-2	Know about fuels and fertilizers.
LO-3	Acquire knowledge about the basic concepts of Organic Chemistry.
LO-4	Learn the structure and uses of antibiotics, anesthetics, antipyretics and artificial sugars.
LO-5	Learn about volumetric analysis and separation of chemical compounds.

UNIT I: Chemical Bonding and Nuclear Chemistry

Chemical Bonding: Molecular Orbital Theory-bonding, antibonding and non-bonding orbitals. M. O diagrams for Hydrogen, Helium, Nitrogen; discussion of bond order and magnetic properties. Nuclear Chemistry: Fundamental particles - Isotopes, Isobars, Isotones and Isomers- Differences between chemical reactions and nuclear reactions- group displacement law. Nuclear binding energy - mass defect - calculations. Nuclear fission and nuclear fusion - differences – Stellar energy. Applications of radioisotopes – carbon dating, rock dating and medicinal applications

Unit II: Industrial Chemistry

Fuels: Fuel gases: Natural gas, water gas, semi water gas, carbureted water gas, producer gas, CNG, LPG and oil gas (manufacturing details not

required). Silicones: Synthesis, properties and uses of silicones. Fertilizers: Urea, ammonium sulphate, potassium nitrate NPK fertilizer, superphosphate, triple superphosphate.

UNIT III: Fundamental Concepts in Organic Chemistry

Hybridization: Orbital overlap hybridization and geometry of CH_4, C_2H_4, C_2H_2 and C_6H_6. Polar effects: Inductive effect and consequences on Ka and Kb of organic acids and bases, electromeric, mesomeric, hyper conjugation and steric-examples and explanation. Reaction mechanisms: Types of reactions- aromaticity-aromatic electrophilic substitution; nitration, halogenation, Friedel-Craft's alkylation and acylation. Heterocyclic compounds: Preparation, properties of pyrrole and pyridine.

UNIT IV: Drugs and Specialty Chemicals

Definition, structure and uses: Antibiotics viz., Penicillin, Chloramphenicol and Streptomycin; Anesthetics viz.,Chloroform, ether; Antipyretics viz., aspirin, paracetamol and ibuprofen; Artificial Sweeteners viz., saccharin, Aspartame and cyclamate; Organic Halogen compounds viz., Freon, Teflon.

UNIT V: Analytical Chemistry

Introduction qualitative and quantitative analysis. Principles of volumetric analysis. Separation and purification techniques: extraction, distillation and crystallization. Chromatography: principle and application of column, paper and thin layer chromatography.

Reference Books:

1. V. Veeraiyan, Textbook of Ancillary Chemistry; High mount publishing house, Chennai, first edition,2009.
2. S. Vaithyanathan, Text book of Ancillary Chemistry; Priya Publications, Karur,2006.
3. Arun Bahl, B. S. Bahl, Advanced Organic Chemistry; S. Chand and Company, New Delhi, twenty third edition,2012.
4. P. L. Soni, H. M. Chawla, Text Book of Inorganic Chemistry; Sultan Chand & sons, New Delhi, twenty ninth edition, 2007

COURSE OUTCOMES

COs	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	State the theories of chemical bonding, nuclear reactions and its applications.	1	K2
CO-2	Explain the type of hybridization, electronic effect and mechanism involved in the organic reactions.	1	K2
CO-3	Demonstrate the structure and uses of antibiotics, anesthetics, antipyretics and artificial sugars.	2,3	K3
CO-4	Analyze various methods to identify an appropriate method for the separation of chemical components	3,4	K3
CO-5	Evaluate the efficiencies and uses of various fuels and fertilizers.	4,5	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	24UACH11	CHEMISTRY FOR BIOLOGICAL SCIENCES I	60	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	3	3	2	3	3	3	3	3	3
CO-2	3	3	3	3	2	3	3	3	3	3	3
CO-3	3	3	3	2	2	3	3	3	3	2	3
CO-4	3	3	3	2	2	3	3	3	3	3	2
CO-5	3	3	3	3	2	3	3	3	3	3	2

Strong-3 Medium-2 Low-1

Prepared by
Dr. S. B. Mohamed Khalith

Checked by: Dr.A.Syed Mohamed
Head of the Department

Semester - I	Chemistry Practical for Biological Science-I		24UACH1P			
EC-IP-Allied			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	-	-	2	1

General Objectives:

The course focusses on the preparation of solutions, principles and practical skills of volumetric analysis.

Learning Objectives:

LOs	The learner will be able to:
LO-1	Acquire knowledge on handling apparatus.
LO-2	Gain knowledge about interpreting the results of volumetric titration.
LO-3	Develop the skill in the analysis of hardness of water.
LO-4	Learn to analyze the chemical constituents in chemical products.
LO-5	Develop the skill to perform volumetric titrations.

Volumetric Analysis

1. Estimation of sodium hydroxide using standard sodium carbonate.
2. Estimation of hydrochloric acid using standard oxalic acid.
3. Estimation of ferrous sulphate using standard Mohr's salt.
4. Estimation of oxalic acid using standard ferrous sulphate.
5. Estimation of potassium permanganate using standard sodium hydroxide.
6. Estimation of magnesium using EDTA.
7. Estimation of ferrous ion using diphenyl amine as indicator.

Reference Books:

1. V. Venkateswaran, R. Veerasamy, A. R. Kulandaivelu, Basic Principles of Practical Chemistry; Sultan Chand & sons, Second edition, 1997.

COURSE OUTCOMES

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Explain the importance of estimations of chemical compounds.	1	K2
CO-2	Explain the basic principles involved in titrimetric analysis.	1	K2
CO-3	Calculate the concentrations of unknown solutions.	2,3	K4
CO-4	Prepare standard solutions with different concentrations.	3,4	K3
CO-5	Develop the skill to estimate the amount of a substance present in a given solution.	4,5	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	24UACH1P	CHEMISTRY PRACTICAL FOR PHYSICAL AND BIOLOGICAL SCIENCES	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	3	3	3	3	3	3	3	2
CO-2	3	3	3	3	3	3	3	3	3	3	2
CO-3	3	3	3	3	2	2	3	3	3	3	3
CO-4	3	3	3	3	2	2	3	3	3	3	3
CO-5	3	3	3	3	2	3	3	3	3	3	2

Strong-3 Medium-2 Low-1

Prepared by
Dr. S. B. Mohamed Khalith

Checked by: Dr.A.Syed Mohamed
Head of the Department

Semester - I	BASIC FOOD SCIENCE		24UNND11			
SEC-I-(NME)			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

GENERAL OBJECTIVES

To learn the different food groups, cooking methods and nutritive value of different foods.

LEARNING OBJECTIVES

LO	The learner will be able to:
LO-1	Understanding the basic food groups
LO-2	Apply the best method of cooking cereals
LO-3	Assess the germination process in pulses
LO-4	Categorize the different classification of vegetables
LO-5	Evaluate the nutritive value of fleshy foods

UNIT 1 INTRODUCTION TO FOOD SCIENCE

Functions of food; food guide based on basic five food groups, cooking-objectives and methods

UNIT 2 CEREALS

Composition and nutritive value of rice and wheat. Best method of cooking, loss of nutrients during cooking; Advantages of par boiling

UNIT 3 PULSES

Composition, nutritive value, best method of cooking, loss of nutrients during cooking, germination and its advantages

UNIT 4 VEGETABLES

Classification, nutritive value, loss of nutrients during cooking and methods of reducing nutrient loss during cooking**.**

Unit 5 Fruits and Fleshy Foods

Classification, nutritive value and changes during ripening. Meat, fish, egg and milk: Nutritive value.

REFERENCES BOOKS

1. Shakuntala Manay, M. Shadaksharaswamy, Foods – Facts and Principles. 2nd Edition. New Age International (P) Ltd, New Delhi, Reprint 2005.
2. Srilakshmi, Food Science, New Age international (P) Ltd,New Delhi, Reprint 2006.
3. Sumathi R. Mudambi, Shalini M. Rao, M.V. Rajagopal Food Science, revised second edition, New Age International (p) Limited, Publishers New Delhi, reprint. 2006.

4. Swaminathan, Food Science and Experimental foods, The Bangalore printing and publishing Co. Ltd. Bangalore, 1992.

LEARNING RESOURCES

1. **https://www.sciencedirect.com/journal/trends-in-food-science-and- technology**
2. **https://www.ift.org/**
3. **https://www.fao.org/home/en/**

COURSE OUTCOME

LO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
LO-1	Know about the basic food groups and cooking methods	1	K2
LO-2	Understanding the procedure to know the best method of cooking	2,4	K3
LO-3	Evaluate the cooking method of pulses	2,4	K4
LO-4	Inspect the method of reducing nutrient loss during cooking	2,3,4	K5
LO-5	Observe the ripening process during ripening of fruits	3,5	K4,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	24UNND11	BASIC FOOD SCIENCE					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	2	3	3	3	3	3	-
CO-2	3	3	3	3	2	-	3	3	3	3	3
CO-3	3	3	3	3	2	3	3	3	3	3	3
CO-4	3	3	-	3	2	3	-	3	3	3	3
CO-5	3	-	3	3	2	3	3	3	3	-	3

Strong-3 Medium-2 Low-1

Prepared by

Ms. F.Fathima Farsana

Checked by : Mr. S.M. Prasad

Head of the Department

Semester - I	SPORTS NUTRITION		24UNND11			
FC			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

GENERAL OBJECTIVES

To understand the basic principles of health education and sports nutrition, importance of diet for an athlete

LEARNING OBJECTIVES

LO	The learner will be able to:
LO-1	Understanding the importance of health education and sports nutrition
LO-2	Gain knowledge about aerobic exercise and yoga
LO-3	Assess the benefits of macronutrients in physical fitness
LO-4	Discuss the difference between macro nutrient and micro nutrients in physical fitness
LO-5	Gain knowledge about importance of nutrition diet in sports

UNIT : 1 INTRODUCTION TO PHYSICAL FITNESS

Components of fitness, Health and Sports related fitness, Description of Aerobic and anaerobic sports- Types and Benefits- Body weight and composition for health and sport, Strategies for weight management

UNIT : 2 ENERGY SYSTEMS FOR EXERCISE

Types of muscle fibres, Fuel sources and energy systems for exercise, energy pathways, regulation of energy metabolism-metabolic response to exercise and metabolic adaptation to exercise training

UNIT : 3 ROLE OF MACRONUTRIENTS IN PHYSICAL FITNESS

Carbohydrates – Utilization of carbohydrate before, during and after exercise, importance of glycogen loading. Proteins – role of proteins for exercise, requirements before, during and after exercise. Fats – role of fats in exercise, requirements before, during and after exercise, Fat loading-effects on exercise performance. Macronutrients Requirements for Power, endurance sports and strength training activities.

UNIT : 4 ROLE OF MICRONUTRIENTS AND WATER FOR EXERCISE

Role of vitamins and minerals for exercise, Role of Antioxidant nutrients for exercise, Relative energy deficiency. Water, electrolyte and temperature regulation. Effect of dehydration and hyper hydration on performance. Fluid guidelines before, during and after exercise

UNIT : 5 NUTRITION FOR ATHLETES

Importance of pre-event, during and post-event meals, preparing for competition, dealing with cramps, GI distress, electrolyte balance-sports drinks. Role of Sports supplements, Ergogenic aids to improve performance. Nutrient requirements for children, adults and elderly involved in different sports. Eating disorders-types, prevalence, risk factors, effect on sports performance, treatment and prevention

REFERENCES BOOKS

1. Fink H.H., Burgoon L.A., Mikesky A.E.(2018) Practical applications in Sports Nutrition. Jones and Bartlett Publishers. Sudbery, Massachusetts.
2. Mahan K and Sylvia E. Stump (2000) Krause's Food Nutrition and Diet Therapy, Saunders, USA.
3. McArdle .W.D., Frank. I. Katch, Victor L Katch (2005) Sports and ExerciseNutrition. Lippincott, Williams and Wilkins, Philadelphia
4. Sharkey B.J. (2002) Fitness and Health: Human Kinetics, Hong Kong
5. Williams M.H., Anderson D.E., Rawson E.S. (2013) Nutrition for Health, Fitness and Sport. McGraw Hill, New York.

LEARNING RESOURCES

1. sportsmedicine.about.com
2. http://sportsmedicine.about.com/od/sportsnutrition/a/carbohydrates.htm

COURSE OUTCOME

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Infer the terms related to physical fitness, nutrients-and supplements for exercise.	1,2,5	K1
CO-2	Discuss the benefits of different exercise, significance of body weight and composition parameters, fuel system, nutrients, supplements and ergogenic aids for exercise.	2,3,5	K3
CO-3	Explain the significance of body composition parameters, fuel systems, energy pathways and utilization of nutrients, sports supplements and ergogenic aids for exercise.	2,4,5	K4
CO-4	Analyze the role of energy pathways, macro and micronutrients, sports supplements and ergogenic aids used by athletes to improve performance.	1,2,3,4,	K4
CO-5	Assess the functions of nutrients before, during and after exercise, and recommend meal plans for athletes involved in different sports.	2,3,5	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	24UNND11	Sports Nutrition	2	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	3	3
CO-2	-	-	3	2	3	-	-	3	-	-	3
CO-3	3	3	3	-	3	-	-	2	2	-	2
CO-4	3	3	3	-	3	-	2	2	2	2	2
CO-5	3	3	3	3	3	-	3	3	3	3	3
	Strong-3 Medium-2 Low-1										

Prepared by

Dr.J.Merrylin

Checked by : Mr. S.M. Prasad

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	FOOD SCIENCE		24UCND21			
Core-II			L	T	P	C
Hrs./Week: 5	Hrs./Semester : 75	Marks :100	5	-	-	5

General Objectives

The course deals with the importance of food and its groups, the nutritional value & different methods of food preparation

Learning Objectives

LO	The learners will be able to
LO-1	Understand the importance of food, food groups in daily life and the link between food and nutrients
LO-2	Understand the various cereals, millets and its products
LO-3	Categorize plant foods, nutritive value and pigments
LO-4	Assess the composition and nutritive value of animal foods
LO-5	Identify the various fats, oils and sugars

UNIT: 1 INTODUCTION TO FOOD SCIENCE

Food: Definition, functional classification, groups (4, 5, 7 and 11), food pyramid. Cooking: Definition and objectives; Methods- Moist heat methods, dry heat methods, combination of both and micro wave cooking; Effect of cooking on nutrients.

Beverages: Classification; Coffee beverage- Constituents and method of preparation; Tea- Types, preparation; Cocoa- Composition, nutritive value and preparation of cocoa beverage; Fruit beverages- Types; Introduction to vegetable juices, milk based beverages, malted beverages, carbonated non-alcoholic beverages and alcoholic beverages.

UNIT : 2 CEREALS, MILLETS AND PULSES

Cereals and Millets: Structure, composition and nutritive value of rice, wheat and Oats; Nutritive value of maize, jowar, ragi and bajra. Cereal cookery: Effect of moist heat- Hydrolysis, Gelatinization and factors affecting gelatinization, gel formation, retro gradation and syneresis; Effect of dry heat; Role of cereals in cookery.

Pulses: Composition, nutritive value, toxic constituents; Pulse cookery- Effect of cooking, factors affecting cooking quality, role of pulses in cookery, germination and its advantages.

UNIT : 3 MILK, EGG, MEAT, POULTRY AND FISH

Milk and milk products: Composition and nutritive value of milk; Milk cookery- Effect of heat, effect of acid and effect of enzymes; Milk

products- Non fermented and fermented products (does not include preparation); Role of milk in cookery.

Egg: Structure, composition, nutritive value; Egg cookery- Effect of eat, factors affecting coagulation of egg proteins and effect of other ingredients on egg protein; Role of egg in cookery; Home scale method for detecting egg quality.

Meat: Classification, composition, nutritive value, rigor mortis, ageing and tenderizing; Meat cookery- Changes during cooking.

Poultry: Classification, composition and nutritive value. Fish: Classification, composition, nutritive value, selection and principles of fish

UNIT : 4 VEGETABLES AND FRUITS

Vegetables: Classification (nutritional), composition, nutritive value; Pigments in vegetables- Water soluble and water insoluble; Enzymes, flavor compounds and bitter compounds; Vegetable cookery- Preliminary preparation, changes during cooking, loss of nutrients during cooking, effect of cooking on pigments, role of vegetables in cookery.

Fruits: Classification, composition, nutritive value, ripening of fruits; Browning- Types and preventive measures.

Spices: General functions, role in cookery; Medicinal value of commonly used spices.

UNIT : 5 FATS OILS AND SUGARS

Fats and oils: Composition and nutritive value, basic knowledge about commonly used fats and oils (lard, butter, margarine, cotton seed oil, ground nut oil, coconut oil, soya bean oil, olive oil, rice bran oil, sesame oil, rape seed oil, mustard oil and palm oil); Spoilage of fat- Types and prevention; Effect of heating, role of fats and oils in cookery.

Sugar and related products: Nutritive value, characteristics and uses of various types of sugars; Sugar cookery- Crystallization and factors affecting crystallization; Stages of sugar cookery; Role of sugar in cookery

REFERENCES

1. Mahtab, S. Bamji, Kamala Krishnasamy, Brahmam G.N.V (2012) Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.
2. Maney S (2008). Foods, Facts and Principles, 3 rd Edition Published by Wiley Eastern, New Delhi.
3. Raina U, Kashyap S, Narula V, Thomas S Suvira, VirS, Chopra S (2010) Basic Food Preparation: A Complete Manual, 4th Edition, Orient Black Swan Ltd, Mumbai.

4. Srilakshmi, B. (2017) Nutrition Science, New Age International (P) Ltd., New Delhi,.
5. Sunetra Roy (2017). Food Science and Nutrition, Oxford University Press, New Delhi.
6. Usha Chandrasekhar (2002) Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi

COURSE OUTCOME

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Summarize and critically discuss & understand both fundamental and applied aspects of Food Science.	1,2,4, 5	K2
CO-2	Identifying nutrient specific force and apply the principles from the various factors of foods and related disciplines to solve practical as well as real world problems.	1,2,3, 5	K3
CO-3	Understand the food groups and their functions, acquire knowledge on different methods of cooking and apply process of different foods.	1,2,3, 4,5	K3
CO-4	Use combination of foods in the development of food products. Identify and control adulterants in various foods and evaluate food quality.	1,2,3, 4,5	K5
CO-5	Use current information Technologies to locate and apply evidence- based guidelines and protocol and get imported with critical thinking to take leadership roles in the field of health, diet and special nutritional needs.	2,3,4, 5	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	24UCND21			Food Science			5			5	
Course Outcomes (COs)	Programme Outcomes (PLOs)						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	2
CO-2	3	3	3	3	3	-	3	3	3	-	3
CO-3	3	3	3	3	3	2	3	3	3	3	1
CO-4	3	3	3	3	3	2	2	3	3	3	1
CO-5	3	3	3	3	3	3	-	3	3	3	2
	Strong-3 Medium-2 Low-1										

Prepared by

Mrs. M.Vadivel Devi

Checked by : Mr. S.M. Prasad

Head of the Department

Semester - II	BASIC COOKERY PRACTICALS		24UCND2P			
Core-II-P			L	T	P	C
Hrs./Week: 3	Hrs./Semester : 45	Marks :100	-	-	3	3

General Objectives

To help students understand the basics of food preparation techniques.

Learning Objectives

LO	The learners will be able to
LO-1	Demonstrate skills to prepare various beverages
LO-2	Choose different methods of preparing cereals
LO-3	Acquire skills on different methods of cooking animal foods
LO-4	Understand experimental cookery on vegetables and fruits
LO-5	Develop fats as a medium of cooking

UNIT: 1 INTODUCTION TO FOOD SCIENCE

1. Grouping of foods according to ICMR classification.
2. Measurement of food materials using standard measuring cups, spoons and weighing.
3. Find the percentage of edible portion of foods.
4. Preparation of any one beverage under the following types- refreshing, nourishing, stimulating, soothing and appetizing.

UNIT: 2 CEREALS MILLETS AND PULSES

1. Observe the microscopic structure of different starches before and after gelatinization (rice, wheat and corn).
2. Study the effect of temperature, time of heating, concentration, addition of sugar and acid on gelatinization of starch.
3. Prepare recipes using the following processes- Gelatinization, gluten formation and gel formation.
4. Demonstrate the best method of cooking rice.
5. Demonstrate the effect of soaking, hard water, sodium bicarbonate and papaya on cooking quality of pulses.
6. Prepare recipes using whole gram, dhal, pulse flours, sprouted pulses and cereal pulse combination.

UNIT: 3 MILK, EGG, MEAT AND POULTRY

1. Demonstrate the factors affecting coagulation of milk protein.
2. Prepare recipes using milk and its products.
3. Demonstrate the formation of ferrous sulphide in boiling egg and its preventive measures.
4. Demonstrate the effect of addition of acid, fat, salt, water and sugar on the texture of omelettes.

5. Prepare recipes where egg acts as – thickening agent, binding agent, emulsifying agent and enriching agent.

UNIT: 4 VEGETABLES AND FRUITS

1. Demonstrate the effect of acid, alkali and over cooking on vegetables containing different pigments.
2. Demonstrate the effects of different amounts of water added to vegetables during cooking on flavor and appearance.
3. Demonstrate enzymatic browning in vegetables and fruits and any four methods of preventing it.
4. Prepare the following using fruits and vegetables- salads, soups and curries.

UNIT: 5 FATS OILS AND SUGARS

1. Determine the smoking point of any 4 cooking oils.
2. Prepare recipes using shallow fat and deep fat frying methods.
3. Demonstrate the stages of sugar cookery
4. Prepare recipes using various stages of sugar cookery and jaggery.

REFERENCES

1. Bamji MS, Krishnaswamy K, Brahmam GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd

2. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd.

3. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.

4. Srilakshmi. B. Food Science, New Age International (P) Ltd. Publishers, Sixth Edition 2016.

COURSE OUTCOME

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Demonstrate skills on determination of edible portion,effect of cooking on volume and weight.	1,2,3,4	K2
CO-2	Choose appropriate cooking method to conserve nutrients.	2,3	K3&4
CO-3	Acquire skills on different methods of cooking	2,3,4	K5&6
CO-4	Understand experimental cookery.	3,4,5	K5&6
CO-5	Develop recipes by applying knowledge on cooking methods and properties of food	3,4,5	K5&6

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

RELATIONSHIP MATRIX

Semester	Course Code			Title of the Course			Hours			Credits	
II	24UCND2P			Basic Cookery Practical			45			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	3	2	-	-	3	3	3	3	-
CO-2	-	3	3	3	-	1	-	3	3	-	-
CO-3	-	3	3	2	-	3	-	3	3	3	-
CO-4	-	3	3	3	3	3	-	-	3	3	3
CO-5	-	3	3	1	2	3	-	-	3	3	3
	Strong-3 Medium-2 Low-1										

Prepared by

Mrs. M.Vadivel Devi

Checked by : Mr. S.M. Prasad

Head of the Department

Semester - II	Chemistry for Biological Science –II		24UACH21			
EC-II (Allied)			L	T	P	C
Hrs./Week: 4	Hrs./Semester : 60	Marks :100	4	-	-	4

General Objective:

This course aims to provide knowledge on coordination compounds, purification of water, preparation and properties of carbohydrates and amino acids, fundamentals of electrochemistry and photochemistry.

Learning Objectives:

LO	The learners will be able to:
LO-1	Understand the nomenclature of coordination compounds and purification techniques of water.
LO-2	Explain the preparation and properties of carbohydrates.
LO-3	Know about the preparation, properties, structure and importance of amino acids.
LO-4	Learn about different electrodes and conductometric titrations.
LO-5	Acquire knowledge about photochemical laws and processes.

UNIT I- Co-ordination Chemistry and Water Technology

Co-ordination Chemistry**:** Definition of terms - IUPAC Nomenclature - Werner'stheory - EAN rule - Pauling's theory – Postulates - Applications to $[Ni(CO)_4]$, $[Ni(CN)_4]^{2-}$, $[Co(CN)_6]^{3-}$ Chelation - Biological role of Hemoglobin and Chlorophyll (elementary idea) - Applications in qualitative and quantitative analysis.

Water Technology: Hardness of water, determination of hardness of water using EDTA method, zeolite method-Purification techniques – BOD and COD.

Unit II- Carbohydrates

Classification, preparation and properties of glucose and fructose. Discussion of open chain ring structures of glucose and fructose. Glucose-fructose interconversion. Preparation and properties of sucrose, starch and cellulose.

UNIT III- Amino Acids and Essential elements of biosystem

Classification - preparation and properties of alanine, preparation of dipeptides using Bergmann method - Proteins- classification – structure - Colour reactions – Biological functions – nucleosides -nucleotides – RNA and DNA – structure. Essentials of trace metals in biological system-Na, Cu, K, Zn, Fe, Mg.

UNIT IV- Electrochemistry

Galvanic cells - Standard hydrogen electrode - calomel electrode - standard electrode potentials -electrochemical series. Strong and weak electrolytes - ionic product of water -pH, pKa, pKb. Conductometric titrations - pH determination by colorimetric method – buffer solutions and its biological applications - electroplating - Nickel and chrome
plating – Types of cells -fuel cells-corrosion and its prevention.

UNIT V- Photochemistry

Grothus - Drapper's law and Stark-Einstein's law of photochemical equivalence, Quantum yield - Hydrogen -chloride reaction. Phosphorescence, fluorescence, chemiluminescence and photosensitization and photosynthesis (definition with examples).

Textbooks:

1. V. Veeraiyan, Textbook of Ancillary Chemistry; High mount publishing house, Chennai, first edition, 2009.
2. S. Vaithyanathan, Text book of Ancillary Chemistry; Priya Publications, Karur, 2006.
3. Arun Bahl, B. S. Bahl, Advanced Organic Chemistry; S. Chand and Company, New Delhi, twenty third edition, 2012.
4. P. L. Soni, H. M. Chawla, Text Book of Organic Chemistry; Sultan Chand & sons, New Delhi, twenty ninth edition, 2007.

Reference books:

1. Arun Bahl, B. S. Bahl, Advanced Organic Chemistry; S. Chand and Company, New Delhi, twenty third edition, 2012.
2. P. L. Soni, H. M. Chawla, Text Book of Organic Chemistry; Sultan Chand & sons, New Delhi, twenty ninth edition, 2007.
3. P. L. Soni, Mohan Katyal, Text book of Inorganic chemistry; Sultan Chand and Company, New Delhi, twentieth edition, 2007.
4. B. R. Puri, L. R. Sharma, M. S. Pathania, Text book Physical Chemistry; Vishal Publishing Co., New Delhi, forty seventh edition, 2018.

5. B. K, Sharma, Industrial Chemistry; GOEL publishing house, Meerut, sixteenth edition, 2014.

COURSE OUTCOMES

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology.	1	K2
CO-2	Explain the preparation and property of carbohydrate.	1, 2, 5	K4
CO-3	Enlighten the biological role of transition metals, amino acids and	1, 2, 5	K4
CO-4	Apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuel	1, 4	K3
CO-5	List out the various type of photochemical process.	1, 2, 5	K4

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

RELATIONSHIP MATRIX

Semester	Course Code	Title of the Course	Hours	Credit
II	24UACH21	CHEMISTRY FOR BIOLOGICAL SCIENCES - II	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	3	2	3	3	3	3	3	3
CO-2	3	3	3	3	3	3	3	3	3	3	3
CO-3	3	3	3	3	3	3	3	3	3	3	3
CO-4	3	3	3	3	2	3	3	3	3	3	3
CO-5	3	3	3	3	3	3	3	3	3	3	3

Strong-3 Medium-2 Low-1

Prepared by

Dr. M. Fathima Shahana

Checked by: Dr.A.Syed Mohamed

Head of the Department

Semester - II	Chemistry Practical for Biological Science –II		24UACH2P			
EC-II-P(Allied)			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	-	-	2	1

General Objectives:

The course aims at identifying monosaccharides, disaccharides, amino acids and estimation of hardness of water and glycine.

Learning Objectives:

LO	The learner will be able to
LO-1	Analyze glucose and fructose.
LO-2	Learn about disaccharide analysis.
LO-3	Gain knowledge about analysis of amino acids.
LO-4	Acquire knowledge about analysis of water.
LO-5	Estimate the amino acid by titration method.

I Qualitative Analysis of Carbohydrates and Aminoacids

1. Analysis of monosaccharides – Glucose and Fructose.
2. Analysis of disaccharides – Maltose and Sucrose.
3. Analysis of Tyrosine, Tryptophan, Histidine and Methionine

II Quantitative Analysis

1. Estimation of hardness of water.
2. Estimation of Glycine by formal titration method.

Textbook:

1. Lab Manual for Analysis of Carbohydrates and Fatty Acids, Department of Chemistry, Sadakathullah Appa College (Autonomous), 2024.

REFERENCE BOOKS

1. Dr. P. Palanivelu Laboratory manual for Analytical Biochemistry & Separation Techniques, Fifth edition, Twenty first century Publications, Coimbatore, (2016).
2. J. Jeyaraman, Laboratory Manual in Biochemistry, New Age International Publishers, (1996).
3. T. Mary Vijaya, M.L. Mani, K. Sunitha Kumari & K.R.T. Asha, Practical Clinical Biochemistry Manual, Rishi Publications, Kalikavilai, (2003).
4. Geetha Damodaran, Practical Biochemistry, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi, (2011).

COURSE OUTCOMES

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Differentiate between carbohydrate and amino acids by qualitative test.	1,2	K2
CO-2	Analyze mono and disaccharides by qualitative test.	1,2,4	K4
CO-3	Analyze aromatic amino acids by qualitative tests.	1,2,4,5	K4
CO-4	Examine the hardness of water sample	1,2,4,5	K4
CO-5	Estimate the amino acid by volumetric method.	1,2,4	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	24UACH2P	CHEMISTRY PRACTICAL FOR BIOLOGICAL SCIENCES - II	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	3	2	3	3	3	3	3	3
CO-2	3	3	3	3	2	3	3	3	3	3	3
CO-3	3	3	3	3	2	3	3	3	3	3	3
CO-4	3	3	3	3	2	3	3	3	3	3	3
CO-5	3	3	3	3	2	3	3	3	3	3	3

Strong-3 Medium-2 Low-1

Prepared by

Dr. M. Fathima Shahana

Checked by: Dr.A.Syed Mohamed

Head of the Department

Semester - II	BASIC NUTRITION		24UNND21			
SEC-II (NME)			L	T	P	C
Hrs./Week: 2	Hrs./Semester : 30	Marks :50	2	-	-	2

GENERAL OBJECTIVES

To know the significance of nutrition in the maintenance of good health and examines on nutrition deficiencies and guides with methods of prevention.

Learning Objectives

LO	The learner will be able to:
LO-1	Examine the energy value of different foods
LO-2	Observe the importance of lipids in foods
LO-3	Evaluate the importance of proteins in human diet
LO-4	Identify the nutritional deficiencies caused by minerals
LO-5	Identify the nutritional deficiencies caused by vitamins

UNIT : 1 ENERGY

Classification, functions, blood sugar regulation and sources. Importance and sources of fiber. **Energy:** Definition, Units for measuring energy, Energy value of foods

UNIT – 2 LIPDS

Composition, classification, functions and sources. Role of lipids in causing heart diseases.

UNIT – 3 PROTEINS

Composition, classification (nutritional and biological), functions, sources and RDA.

UNIT – 4 MINERALS

Calcium, Phosphorus, Iron, Zinc and Iodine–Functions, sources, requirement and effect of deficiency.

UNIT – 5 VITAMINS

Vitamin A, D, E, K, B1, B2 and Vitamin **C**-Functions, sources, requirement and effect of deficiency.

REFERENCES BOOKS

1. Mahtab S. Bamji, N. Pralhad Rao, Vinodini Reddy, Text Book of Human Nutrition Oxford and IBH Publishing Co. Pvt. Ltd, New Delhi, Reprint 1999.
2. Mangala Kango Normal Nutrition (Fundamental and Management) RBSA Publishers S.M.S Highway Jaipur – 302003 L, 2003.

3. Raheena Begum, Text book of Foods, Nutrition and Dietetics, Second Revised Edition, Sterling Publishers Private Ltd, New Delhi, 2005.
4. Srilakshmi, Nutrition Science, New Age International (P) Ltd, New Delhi, 2002.

COURSE OUTCOME

CO	Upon completion the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Understanding the role of energy and fiber rich foods	1,3	K1
CO-2	Identifying the role of lipids in causing heart diseases	1,2,3	K3
CO-3	Invent the importance of proteins	2,3	K4
CO-4	Examine the role and deficiency of minerals	2,3	K5
CO-5	Estimate the role and deficiency of vitamins	1,2,3	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	24UNND21	BASIC NUTRITION	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	2	3	3	3	3	3	3
CO-2	3	3	-	3	2	3	-	3	3	-	3
CO-3	3	3	3	3	2	3	3	3	3	3	3
CO-4	3	3	3	3	2	3	3	3	3	3	3
CO-5	-	3	3	-	2	-	3	3	-	3	3

Strong-3 Medium-2 Low-1

Prepared by

Ms.F.Fathima Farsana

Checked by : Mr. S.M. Prasad

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.