

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24FTA101	TAMIL - I	60	3	25	75	100

OBJECTIVES

- தமிழ் மொழியின் பண்புகளை மாணவர் மனதில் பதிய வைத்தல் தாய்மொழியின் பழமை, சிறப்பு, விழுமியங்கள் ஆகியவற்றைக் கற்பித்தல். செவ்வியல் இலக்கியங்களை அறியச் செய்தல்
- தமிழில் உள்ள இலக்கிய வடிவங்களை அறிமுகப்படுத்தி படைப்பாக்கத்திற்கு துணை நிறுதல். இலக்கிய இலக்கணக் கற்றல் வழி போட்டித் தேர்வுகளுக்கு ஆயத்தப்படுத்தல்.

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	செவ்வியல் இலக்கிய நெடிய வரலாறு, இலக்கணப் பயிற்சி வழி போட்டித் தேர்வுகளை எதிர்கொள்ளல்.	K3
CO2	சமூகச் நிலைப்பாடு, பண்டைய அரச வரலாறு போன்றவற்றை விளக்கி, வாசிப்பையும் உச்சரிப்பையும் மேம்படுத்தி புரியவைத்தல்	K2
CO3	நீதி இலக்கியங்களின் வழி ஒழுக்க விழுமியங்களை வலியுறுத்தி அறவுரைகளை மேற்கொள்ளல்.	K3
CO4	காப்பிய மாந்தர்களின் வாழ்வியல் வழி தனி மனித மன உணர்வுகளை வெளிக் கொணரல்	K4
CO5	பக்தி இயக்க காலத்தில் சமூகப் பண்பாட்டு வரலாற்றை இனம் காணல்.	K2

அலகு - 1	இலக்கணம் & இலக்கிய வரலாறு அறிமுகம் 1. ஐந்திலக்கணம் - அறிமுகம் 2. சங்க இலக்கியங்கள் - எட்டுத்தொகை, பத்துப்பாட்டு 3. நீதி இலக்கியங்கள் 4. காப்பியங்கள் 5. பக்தி இலக்கியங்கள்	(12 Hours)
அலகு - 2	சங்க இலக்கியம் 1. நற்றிணை - 3 பாடல்கள் (எண்கள் : 47,96,285) 2. குறுந்தொகை - 6 பாடல்கள் (எண்கள் : 18,27,58,371,399,400) 3. புறநானூறு - 6 பாடல்கள் (எண்கள் : 25,86,92,183) 4. முல்லைப் பாட்டு - (முழுவதும்)	(12 Hours)
அலகு - 3	அற இலக்கியம் 1. திருக்குறள் - அறன் வலியுறுத்தல் 2. நாலடியார் - 8 பாடல்கள் 3. பழமொழி நானூறு - 8 பாடல்கள் 4. இனியவை நாற்பது - 8 பாடல்கள்	(12 Hours)
அலகு - 4	காப்பியம் & சமய இலக்கியம் 1. சிலப்பதிகாரம் - வழக்குரை காதை (முழுவதும்) 2. கம்ப ராமாயணம் - குகப்படலம் (25 பாடல்கள்) 3. சீறாப்புராணம் - மானுக்குப் பிணை நின்ற படலம் (30 பாடல்கள்) 4. இயேசு காவியம் - ஊதாரிப் பிள்ளை (முழுவதும்)	(12 Hours)
அலகு - 5	பக்தி & பகுத்தறிவு இலக்கியம் 1. நாயன்மார் பாசுரங்கள் - சமயக்குரவர் நால்வர் (4 பாடல்கள்) 2. ஆழ்வார் பாசுரங்கள் - முதலாழ்வார்கள் மற்றும் ஆண்டாள் (4 பாடல்கள்) 3. திருமந்திரம் - திருமுலர் (7 பாடல்கள்) 4. இராவண காவியம் - புலவர் குழந்தை (5 பாடல்கள்)	(12 Hours)

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- 1 செய்யுள் திரட்டு - தமிழ்த்துறை, சி.அப்துல் ஹக்கீம் கல்லூரி வெளியீடு. 2024 சூன் வெளியீடு
- 2 தமிழ் இலக்கிய வரலாறு - பேரா.மது.ச.விமலானந்தம்
அபிராமி பதிப்பகம், இராயபுரம், சென்னை -13
மறு பதிப்பு -2002
- 3 நற்றிமிழ் இலக்கணம் - டாக்டர்.சொ.பரமசிவம்,
பட்டுப் பதிப்பகம், 1269, 32-ஆம் தெரு
அண்ணாநகர் மேற்கு, கம்பர் குடியிருப்பு,
சென்னை -40
பன்னிரண்டாம் பதிப்பு -2012

Web Sources

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- Catalogue of the Tamil books in the Library of British Congress archive.org
- Tamil novels on line - books.tamilcube.com

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	1	1	3	2	2	-	-	-	-	-	
CO2	1	2	2	3	3	-	-	-	-	-	
CO3	2	2	3	2	3	-	-	-	-	-	
CO4	3	2	2	2	3	-	-	-	-	-	
CO5	3	2	3	2	3	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

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Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24FTA201	TAMIL - I	60	3	25	75	100

OBJECTIVES

- தமிழ் மொழியின் பண்புகளை மாணவர் மனதில் பதிய வைத்தல் தாய்மொழியின் பழமை, சிறப்பு, விழுமியங்கள் ஆகியவற்றைக்கற்பித்தல்.செவ்வியல் இலக்கியங்களை அறியச் செய்தல்
- தமிழில் உள்ள இலக்கிய வடிவங்களை அறிமுகப்படுத்தி படைப்பாக்கத்திற்கு துணை நின்றல்.இலக்கிய இலக்கணக் கற்றல் வழி போட்டித் தேர்வுகளுக்கு ஆயத்தப்படுத்தல்.

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	காலந்தோறும் தமிழ் இலக்கியங்களில் மாறுபடும் பாடுபொருள். வடிவம் முதலியவற்றை வரலாற்றின் வழி உணர்த்தல்.	K4
CO2	சிறுநிலக்கியங்களின் வழி இலக்கியச் சுவையினையும் பண்பாட்டு அறிவினையும் பெறுதல்	K1
CO3	கவிதை வழி சமூகச் சிந்தனைகளையும், தேவைகளையும் கவிதை வழி இயம்பல்.	K2
CO4	சிறுகதைகளின் வாயிலாக சமகால மனிதர்களின் பண்பு நலன்களை அறிய வைத்தல்.	K4
CO5	நடிப்பாற்றல், படைப்பாற்றல் மற்றும் கலைத் தன்மைகளை வளர்த்தல்.	K6

பாடத்திட்டம்

அலகு - 1	இலக்கிய வரலாறு அறிமுகம் 1. சிறுநிலக்கியங்கள் - அறிமுகம் 2. கவிதை - தோற்றமும் வளர்ச்சியும் 3. சிறுகதை - தோற்றமும் வளர்ச்சியும் 4. நாடகம் - தோற்றமும் வளர்ச்சியும்	(12 Hours)
அலகு - 2	சிறுநிலக்கியங்கள் & தனிப்பாடல்கள் 1. கலிங்கத்துப்பரணி - களம் பாடியது (7 பாடல்கள்) 2. குற்றாலக் குறவஞ்சி - வசந்தவல்லி பந்தடித்தல் (7 பாடல்கள்) 3. முக்கூடற்பள்ளு - பள்ளியர் ஏசல் (11 பாடல்கள்) 4. தனிப்பாடல்கள் - ஔவை, வீரராகவர், காளமேகம், சத்திமுத்திப் புலவர்,படிக்காகப் புலவர், பட்டினத்தடிகள், சொக்கநாதப்புலவர் (7பா.)	(12 Hours)
அலகு - 3	கவிதை 1. பாரதியார் - பாரத தேசம் 2. பாரதிதாசன் - குடும்ப விளக்கு 3. அப்துல் ரகுமான் - வீடு (பித்தன்) 4. வாலி - புத்தகச் சந்தை 5. ஈரோடு தமிழன்பன் - எட்டாவது சீர் (வணக்கம் வள்ளுவ)	(12 Hours)
அலகு - 4	சிறுகதை 1. புதுமைப்பித்தன் - கடவுளும் கந்தசாமிப்பிள்ளையும் 2. ஜெயகாந்தன் - வாய்ச்சொற்கள் 3. அ.விநாயகமூர்த்தி - பரிசு 4. வைரமுத்து - இப்படியும் ஒருவன் இறந்தான்	(12 Hours)
அலகு - 5	நாடகம் 1. பேரறிஞர் அண்ணா - வேலைக்காரி 2. ஆறு.அழகப்பன் - கொல்லிப்பாவை	(12 Hours)

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பார்வை நூல்கள்

- 1 செய்யுள் திரட்டு - சி.அப்துல் ஹக்கீம் கல்லூரி வெளியீடு.
2024 சூன் வெளியீடு
- 2 தமிழ் இலக்கிய வரலாறு - பேரா.மது.ச.விமலானந்தம்
அபிராமி பதிப்பகம், இராயபுரம், சென்னை -13
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- Tamil Books on line- books.tamilcube.com
- Catalogue of the Tamil books in the Library of British Congress archive.org
- Tamil novels on line - books.tamilcube.com

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	2	3	2	-	-	-	-	-	
CO2	2	2	3	2	2	-	-	-	-	-	
CO3	2	2	3	2	3	-	-	-	-	-	
CO4	2	2	3	2	3	-	-	-	-	-	
CO5	2	2	2	3	3	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24CSL201	SKILL LANGUAGE TAMIL திறன் வளர்தமிழ்	60	2	50	50	100

OBJECTIVES

- மாணவர்கள் இலக்கணப் பிழையின்றி எழுதுதல், பேசுதல்
- ஊடகத் தமிழ்ச் செய்திகளை அறிதல்
- கட்டுரை, கவிதை மற்றும் நேர்காணலுக்கான விதிகள் அறிதல்

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	தமிழின் இயல்புகளை அறிதல்	K2
CO2	தமிழ்ச் சொற்களிடையே வேறுபாட்டை உணர்தல்	K2
CO3	நடைமுறை சார் மொழித்திறன்களை உணர்த்தல்	K3
CO4	மொழிப்பயிற்சியை வெளிக்கொணர்தல்	K4
CO5	திறன்களை வளர்க்கும் நெறிகளை அறிதல்	K5

பாடத்திட்டம்

அலகு - 1	கற்றல் திறன் - 1 1. எண்களை எழுத்தால் எழுதுதல் 2. குறில், நெடில் வேறுபாடு அறிதல் 3. திணை, பால் வேறுபாடு அறிதல் 4. மயங்கொலி வேறுபாடு அறிதல் (ர-ற: ந-ண-ன: ல-ள-ழ) 5. இரு பொருள் அறிதல்	(12 Hours)
அலகு - 2	கற்றல் திறன் - 2 1. வாக்கியத்தில் அமைத்தல் 2. அகரவரிசைப்படுத்துதல் 3. பொருந்தாத சொல்லைக் கண்டறிதல் 4. சொற்களை ஒழுங்குபடுத்தி சொற்றொடராக்குதல்	(12 Hours)
அலகு - 3	கேட்டல் திறன் - 1 1. நூல், செய்தித்தாள் வாசித்தல் 2. பாடல் ஒப்புவித்தல் 3. நேர் காணல்	(12 Hours)
அலகு - 4	கேட்டல் திறன் - 2 1. நூல் மதிப்புரை 2. ஏதேனும் ஒரு தலைப்பில் பேசிப் பழகுதல்.	(12 Hours)
அலகு - 5	உணர்தல் திறன் 1. கட்டுரை, கவிதை, துணுக்கு இயற்றுதல் 2. அறிக்கை தயாரித்தல் 3. குழு நடிப்பு	(12 Hours)

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பார்வை நூல்கள்

- 1 மேடைப் பேச்சுக்கலை - டேல் கார்னகி , கண்ணதாசன் பதிப்பகம் 2012 வெளியீடு
- 2 பேச்சுக்கலை - முனைவர் ப.இப்ராஹிம் என்.சி.பி.எச். வெளியீடு முதல் பதிப்பு,2021
3. நற்றமிழ் இலக்கணம் - டாக்டர்.சொ.பரமசிவம், பட்டுப் பதிப்பகம், 1269, 32-ஆம் தெரு அண்ணாநகர் மேற்கு, கம்பர் குடியிருப்பு, சென்னை -40 பன்னிரண்டாம் பதிப்பு -2012

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	3	3	2	-	-	-	-	-	
CO2	1	2	3	3	1	-	-	-	-	-	
CO3	2	2	3	3	2	-	-	-	-	-	
CO4	2	2	3	3	3	-	-	-	-	-	
CO5	2	2	3	3	2	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24FUR101	URDU - I	60	3	25	75	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Describe the Basic Grammar Rules and Sentence Construction	K5
CO2	Identify and Classify the Nouns and Genders	K4
CO3	Comprehend and Analyze Historical Stories (Hikayat)	K4
CO4	Explore and Critique the Essays (Inshayiya)	K6
CO5	Analyze Biographies of Notable Personalities	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours] ➤ Qawaid ❖ Huroof, ki Tareef ❖ Huroof e Tahaji Aur Uske Aqsaam ❖ Jumla ki Tareef ❖ Jumla Banane ka Tariqah UNIT – II [12 Hours] ❖ Ism Ki Tareef ❖ Ism ke Aqsaam Misalon Ke Sath ❖ Jins(Muzakkar aur Maunnas) ki Tareef ❖ Jins ke Aqsaam ❖ Muzakkar aur Muannas ki Tareef ❖ Muzakkar Se Muannas Banane ka Tariqah UNIT – III [12 Hours] ➤ Hikayat ❖ Hikayat ki tareef ❖ Sahabi aur Khalifa ki tareef ❖ Hikayat-e-Sahaba (Khulafa e Raashidain - Sayeduna Abu Bakr Siddiq(R.A),Hazrat Umar(R.A),Hazrat Usman(R.A),Hazrat Ali(R.A) ❖ Shaikh Saadi ka taruf ❖ Hikayat-e-Shaik Saadi ❖ Ek Badsha ❖ Haroon Rasheed	یونٹ I۔ ✓ قواعد ❖ حروف کی تعریف ❖ حروف تہجی اور اس کے اقسام ❖ جملہ کی تعریف ❖ جملہ بنانے کا طریقہ یونٹ II۔ ❖ اسم کی تعریف ❖ اسم کے اقسام مثالوں کے ساتھ ❖ جنس (مذکر اور مؤنث) کی تعریف ❖ جنس کے اقسام ❖ مذکر اور مؤنث کی تعریف ❖ مذکر سے مؤنث بنانے کا طریقہ یونٹ III۔ ✓ حکایت ❖ حکایت کی تعریف ❖ صحابی اور خلیفہ کی تعریف ❖ حکایت صحابہ (خلفائے راشدین سیدنا ابوبکر صدیق رضی اللہ عنہ، حضرت عمر رضی اللہ عنہ، حضرت عثمان رضی اللہ عنہ، حضرت علی رضی اللہ عنہ) ❖ شیخ سعدی کا تعارف ❖ حکایت شیخ سعدی ❖ ایک بادشاہ ❖ ہارون رشید یونٹ IV۔ ✓ انشائیہ ❖ انشائیہ کی تعریف ❖ سر سید احمد خان کا تعارف ❖ امید کی خوشی - سر سید احمد خان ❖ رشید احمد صدیقی کا تعارف ❖ ڈاکٹر عبدالحق مرحوم - رشید احمد صدیقی۔ یونٹ V۔ ✓ شخصیات کی سوانح ❖ سوانح کی تعریف
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UNIT – IV [12 Hours] ➤ Inshayiya ❖ Inshayiya ki tareef ❖ Sir Syed Ahamed Khan ka taruf ❖ Umeed Ki Khushi – Sir Syed Ahamed Khan ❖ Rasheed Ahmed Siddiqi ka taruf ❖ Dr. Abdul Haq Marhoom – Rasheed Ahmed Siddiqi UNIT – V [12 Hours] ➤ Shakhsiyat ki Sawaneh ❖ Sawaneh ki tareef ❖ Allama Iqbal ki Sawaneh ❖ Moulana Abul Kalam Azad ki Sawaneh	❖ علامہ اقبال کی سوانح □□ ❖ مولانا ابوالکلام آزاد کی سوانح □□
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_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

NISAB-E-JAMEEL EDITED BY Dr.S.MOHAMED YASSIR & Dr.S.MOHAMED MUDDASSIR

Reference Book:

- Qawayad Urdu– Maulvi Abdul Haq
- Hikayat e Sahaba – Maulana Yusuf Kandhalvi
- Mazameen e Sir Syed
- Inshayiya aur Inshayiye – Syed Muhammad Hasnain
- Mazhar-e- Adab – Edited by Dr.K.Habeeb Ahmed & Dr.K.H.Kaleemullah
- Adab-E-Jameel – Edited by Dr.K.Habeeb Ahmed , Dr.S.M.Yassir & Dr.S.M.Muddassir

Web Resources :

1. www.rekhta.org 2. www.urduchannel.in 3. www.urducouncil.nic.in

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3							
CO2	3	3	3	3							
CO3	3	3	3	3							
CO4	3	3	3	3							
CO5	3	3	3	3							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24FUR201	URDU - II	60	3	25	75	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Describing Ghazals	K2
CO2	Analyze Urdu Poets' Contributions to Ghazal	K4
CO3	Evaluating Nazams and Its Themes	K5
CO4	Analyze and Critique Nazams by Various Poets	K5
CO5	Evaluate Literary Translations	K6

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours]

➤ Ghazliyat

- ❖ Ghazal ki Tareef
- ❖ Mirza Ghalib ka taruf
- ❖ Mirza Ghalib ki Ghazal → Dil Hi toh Yeh Na Sang....
- ❖ Momin Khan Momin ka taruf
- ❖ Momin Khan Momin ki Ghazal → Adam Mein Rehte tu..

- یونٹ - I
- ✓ ☐ غزلیات
 - ❖ ☐ غزل کی تعریف
 - ❖ ☐ مرزا غالب کا تعارف
 - ❖ ☐ مرزا غالب کی غزل ☐ دل ہی تو یہ نہ سنگ....
 - ❖ ☐ مومن خان مومن کا تعارف
 - ❖ ☐ مومن خان مومن کی غزل ☐ عدم میں رہتے تو.

UNIT – II [12 Hours]

- ❖ Khaja Mir Dard ka tarruf
- ❖ Khaja Mir Dard → Tuhmatein Apne Zimme
- ❖ Jigar Muradabadi ka Tarruf
- ❖ Jigar Muradabadi ki Ghazal → Na Dunya ke Sitam....

- یونٹ - II
- ❖ ☐ خواجہ میر درد کا تعارف
 - ❖ ☐ خواجہ میر درد... تہمتیں چند اپنے ذمے
 - ❖ ☐ جگر مراد آبادی کا تعارف
 - ❖ ☐ جگر مراد آبادی کی غزل ☐ نہ دنیا کے ستم....

UNIT – III [12 Hours]

➤ Nazmein

- ❖ Nazm ki Tareef
- ❖ Allama Iqbal ka tarruf
- ❖ Allama Iqbal ki Nazm → Khitab Ba Naujawan-e-Islam
- ❖ Khaja Altaf Hussain Hali ka tarruf
- ❖ Altaf Hussain Hali Ki Nazm → Taleem Ki Ahmiyat

- یونٹ - III
- ✓ ☐ نظمیں
 - ❖ ☐ نظم کی تعریف
 - ❖ ☐ علامہ اقبال کا تعارف
 - ❖ ☐ علامہ اقبال کی نظم ☐ خطابِ نو جوان اسلام
 - ❖ ☐ خواجہ الطاف حسین حالی کا تعارف
 - ❖ ☐ الطاف حسین حالی کی نظم ☐ تعلیم کی اہمیت

UNIT – IV [12 Hours]

- ❖ Akbar Allahabadi ka tarruf
- ❖ Akbar Allahabadi ki Nazm Nagma e Hasrat
- ❖ Sahir Ludhyanavi ka tarruf
- ❖ Sahir Ludhyanvi Ki Nazm Taj Mahal
- ❖ Faiz Ahmad Faiz ka tarruf
- ❖ Faiz Ahmad Faiz ki Nazm Subh-e-Azadi

- یونٹ - IV
- ❖ ☐ اکبر الہ آبادی کا تعارف
 - ❖ ☐ اکبر الہ آبادی کی نظم نغمہ حسرت
 - ❖ ☐ ساحر لدھیانوی کا تعارف
 - ❖ ☐ ساحر لدھیانوی کی نظم تاج محل
 - ❖ ☐ فیض احمد فیض کا تعارف
 - ❖ ☐ فیض احمد فیض کی نظم صبح آزادی

یونٹ - V

- ✓ ترجمہ نگاری
- ❖ ☐ ترجمہ نگاری کی تعریف

C. Abdul Hakeem College (Autonomous), Melvisharam.

❖ تجارتي الفاظ (اردو اور انگريزي)

❖ پياري اردو (ترجمہ اردو سے

انگريزي)

❖ مکالمات (اردو اور انگريزي)

UNIT – V [12 Hours]

- Tarjama Nigari
- ❖ Tarjama Nigari Ki taareef
- ❖ Tijarati Alfaz (Urdu Aur Angrezi)
- ❖ Pyari Urdu (Tarjuma Urdu se Angrezi)
- ❖ Makalimat (Urdu Aur Angrezi)

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

NISAB-E-JAMEEL EDITED BY Dr.S.MOHAMED YASSIR & Dr.S.MOHAMED MUDDASSIR

Reference Book:

- Deewan-e-Meer
- Deewan-e-Dard
- Deewan-e-Ghalib
- Kuliyaath-e-Momin
- Kuliyaath-e-Akbar
- Kuliyaath-e- Iqbal
- Kuliyaath-e- Jigar
- Kuliyaath-e- Saher Ludhyanvi

Web Resources:

1. www.rekhta.org
2. www.urduchannel.in
3. www.urducouncil.nic.in

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	2							
CO2	2	3	3	2							
CO3	3	2	3	3							
CO4	3	2	2	2							
CO5	3	3	2	3							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24CSL201	SKILL LANGUAGE URDU LANGUAGE IDENTIFICATION AND COMPREHENSION	60	2	50	50	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Understanding Language Skills, Urdu Alphabets and Pronunciation	K2
CO2	Analyze Writing Proficiency in Urdu and Listening Skills	K4
CO3	Describe Compound Words in Urdu	K4
CO4	Constructing Basic Sentences and Reading Skills	K5
CO5	Enhancing Communication Skills and Writing Skills	K6

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours]

➤ Introduction about LSRW

- ❖ Listening
- ❖ Speaking
- ❖ Reading and
- ❖ Writing

یونٹ – I [12 گھنٹے]
LSRW کے بارے میں تعارف ✓

- ✓ سمات
- ✓ تقریر
- ✓ قرات
- ✓ تحریر

یونٹ – II [12 گھنٹے]
✓ سمات

UNIT – II [12 Hours]

Listening:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

یونٹ – III [12 گھنٹے]
✓ تقریر

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

UNIT – III [12 Hours]

Speaking:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

یونٹ – IV [12 گھنٹے]
✓ قرات

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

UNIT – IV [12 Hours]

Reading:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

یونٹ – V [12 گھنٹے]
✓ تحریر

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

C. Abdul Hakeem College (Autonomous), Melvisharam.

UNIT – V [12 Hours]

Writing:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

Urdu for All – Part -I & II published by NCPUL, New Delhi

Reference Books:

1. "Urdu: An Essential Grammar" by Ruth Laila Schmidt
2. "Urdu-English English-Urdu Dictionary" by S. M. Salimuddin, Suhail Anjum, and Rauf Parekh
3. "Urdu ki Pehli Kitab" by Muhammad Sharif Baqa
4. "Learning Urdu: A Comprehensive Course" by Mahvash Shaheen

Web Resources :

1. www.rekhta.org
2. www.urduchannel.in
3. www.urducouncil.nic.in
4. BBC Urdu
5. UrduPod101
6. YouTube Channels - Urdu Stories for Kids

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3							
CO2	3	2	2	3							
CO3	3	3	3	3							
CO4	3	2	2	3							
CO5	3	3	2	2							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>GEL</i>	<i>U24FEN101</i>	<i>ENGLISH – I</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To enable learners to acquire self-awareness required in various life situations.
CO2	To enable learners to inculcate positive thinking required in various life situations.
CO3	To help them acquire the attribute of empathy
CO4	To assist them in acquiring creative and critical thinking abilities
CO5	To enable them to learn the basic grammar

Unit I

Prose

- At School - M. K. Gandhi
- My Early Days - A.P.J. Abdul Kalam

Poetry

- The Character of Happy Life - Henry Wotton
- Stopping by the Woods on a Snowy Evening - Robert Frost

Unit II

Prose

- My Financial Career - Stephen Leacock
- Computeracy - Peter Lurie

Poetry

- Where the Mind is Without Fear – Rabindranath Tagore
- If – Rudyard Kipling

Unit III : Short Stories

- The Happy Prince - Oscar Wilde
- Engine Trouble - R.K. Narayan

Unit IV : Autobiography & Reader's Theatre

- I am Malala (Chapter 1) - Malala Yousafzai,
- The Refund – Fritz Karinthy

Unit V

Lexical Skills & Grammar

- Synonyms and Antonyms
- Homophones and Homonyms
- Words often Confused

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Grammar

- a. Sentence
- b. Subject and predicate
- c. Parts of Speech
- d. Noun and its kinds
- e. Pronoun and its kinds
- f. Articles and Prepositions

Prescribed Book: New Vistas in English – I, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24FEN201</i>	<i>ENGLISH – II</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To facilitate self-awareness for handling diverse life situations.
CO2	To cultivate positive thinking skills for various life scenarios.
CO3	To develop empathy as a core attribute.
CO4	To nurture creative and critical thinking abilities.
CO5	To apply acquired grammar knowledge to improve the quality and effectiveness.

Unit I

Prose

- The Secret of Work - Swami Vivekananda
- Uncle Podger Hangs a Picture – Jerome K Jerome

Poetry

- Satan's Speech - John Milton
- Night of the Scorpion - Nissim Ezekiel

Unit II

Prose

- Mobile and Mixed Up – Anil Dharker
- Words of Wisdom – Chetan Bhagat

Poetry

- The Road Not Taken – Robert Frost
- Alice Fell or Poverty – William Wordsworth

Unit III

Short Stories

- The Lady or the Tiger - Frank Stockton
- The Diamond Necklace – Guy de Maupassant

Unit IV

Biography & One Act Play

- The Saga of a Philanthropist
- The Never Never Nest – Cedric Mount

Unit V

Lexical Skills & Grammar

- One Word Substitutes
- Correct Usage of words
- Formation of plurals

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Parts of Speech

- a. The Phrase and The Clause - Types
- b. Adjective and its kinds
- c. Verb and its kinds
- d. Conjunction
- e. Interjection

Prescribed Book: New Vistas in English–II, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24FEN201</i>	<i>SKILLS FOR COMMUNICATION</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To inculcate communicative proficiencies in the learners
CO2	To develop the essential aspects of effective written communication.
CO3	To implant essential emotions needed in professional life.
CO4	To enhance contextual communication in personal and professional situations with courtesy
CO5	To instill competences required in recruitment process

Unit I - Spoken Communication:

1. Communication Etiquette
2. Introducing Self and Others
3. Listening for Specific Information
4. Asking for Information and Giving Information
5. Giving and Following Instructions

Unit II - Written Communication:

1. Paragraph and Types of Paragraphs
2. Descriptive Writing – Writing a Short Descriptive Essays of Two to Three Paragraphs
3. Dialogue Writing
4. Preparing Agenda for the Meeting
5. Writing Minutes of the Meeting

Unit III - Intrapersonal Communication:

1. Emotional Intelligence
2. Goal Setting
3. Stress Management
4. Positive Attitude
5. Common Sense

Unit – IV - Interpersonal Communication:

1. Listening to Famous Speeches and Poems
2. Making Short Speeches – Welcome Address and Vote of Thanks
3. Making Short Presentation with PPT
4. Day - to - Day Communication
5. Communication with Fellow-Employee

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Unit – V - Employment Communication:

1. Preparing Resume & Curriculum Vitae
2. Writing Covering Letter
3. Aptitude Test
4. Facing an Interview
5. Group Discussion

Prescribed Book: Skills for Communication, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	CC	U24MPH101	PROPERTIES OF MATTER AND ACOUSTICS	75	5	25	75	100

Objectives:

To study the properties of matter and sound, and apply the concepts in practical applications.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Express the basic concepts of elasticity	K2
CO2	Employ the expressions for bending moment of beams	K3
CO3	Determine the viscosity and surface tension of liquids using experimental methods	K4
CO4	Outline the concepts of waves and oscillations	K4
CO5	Focus on acoustics of buildings and ultrasonic waves in real life situations	K4

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Unit – I

15 Hours

Elasticity: Hooke's law – Stress-strain diagram – Moduli of elasticity – Poisson's ratio – Relation between elastic moduli – Work done in stretching and twisting a wire – Rigidity modulus by static torsion – Rigidity modulus by torsional pendulum (with and without masses).

Unit – II

15 Hours

Bending of beams: Cantilever – Expression for bending moment – Depression at the loaded end of the cantilever – Oscillations of a cantilever and expression for time period – Experiment to determine Young's modulus by non-uniform and uniform bending – Young's modulus by Konig's method.

Unit – III

15 Hours

Viscosity: Streamline and turbulent flow – Poiseuille's equation for flow of liquid through a horizontal capillary tube – Corrections – Experiment to determine viscosity using Poiseuille's method – Ostwald's viscometer – Terminal velocity and Stoke's formula – Experiment to determine viscosity of highly viscous liquid – Variation of viscosity with temperature.

Surface Tension: Molecular forces – Excess pressure inside a curved liquid surface – Rise of liquid in a capillary tube – Experiment to determine surface tension and interfacial tension by drop weight method – Variation of surface tension with temperature.

Unit – IV

15 Hours

Waves and Oscillations: Simple harmonic motion (SHM) – Differential equation of SHM – Average kinetic energy and total energy of a vibrating particle – Free, Damped and Forced vibrations – Resonance and sharpness of resonance.

Velocity of transverse wave along a stretched string – Laws of transverse vibrations in strings – Verification using sonometer – Experiment to determine AC frequency using sonometer – Melde's apparatus and determination of frequency.

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Unit – V

15 Hours

Fourier Theorem: Fourier series – Fourier coefficients – Application of Fourier theorem to square wave.

Acoustics of Buildings: Intensity of sound – Decibel and Bel – Reverberation – Sabine's reverberation formula – Determination of absorption coefficient – Factors affecting acoustics of buildings.

Ultrasonics: Production of ultrasonic waves by magnetostriction and piezoelectric oscillators – Detection of ultrasonic waves – Applications of ultrasonic waves.

Text Books:

1. Elements of Properties of Matter – D.S. Mathur – S.Chand Publishers – 11th Edition, 2022.
2. Properties of Matter – R. Murugesan - S.Chand Publishers – 5th Edition, 2014.
3. Waves and Oscillations – N. Subrahmanyam, Brij Lal – Vikas Publishing House – 2nd Revised Edition, 2014.
4. A Text Book of Sound - N. Subrahmanyam, Brij Lal - Vikas Publishing House – 2nd Revised Edition, 1997.
5. R.Murugesan,2012, Properties of Matter, S.Chandand Co.

Reference Books:

1. C.J. Smith, 1960, General Properties of Matter, Orient Longman Publishers
2. H.R. Gulati, 1977, Fundamental of General Properties of Matter, Fifth edition,R. Chand and Co.
3. A.P French, 1973, Vibration and Waves, MIT Introductory Physics, Arnold-Heinmann India.

E-Resources:

1. <https://www.biolinscientific.com/blog/what-are-surfactants-and-how-do-they-work>
2. <http://hyperphysics.phy-astr.gsu.edu/hbase/permot2.html>
3. <https://www.youtube.com/watch?v=gT8Nth9NWPM>
4. <https://www.youtube.com/watch?v=m4u-SuaSu1sandt=3s>
5. <https://www.biolinscientific.com/blog/what-are-surfactants-and-how-do-they-work>
6. <https://learningtechnologyofficial.com/category/fluid-mechanics-lab/>
7. <http://www.sound-physics.com/>
8. <http://nptel.ac.in/courses/112104026/>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes						Programme Specific Outcomes			Mean
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	
CO1	3	3	3	---	1	---	3	3	3	2.11
CO2	3	3	3	---	1	1	3	3	3	2.22
CO3	3	3	3	---	1	1	3	3	3	2.22
CO4	3	3	3	---	1	---	3	3	3	2.11
CO5	3	3	3	---	1	1	3	3	3	2.22
Mean Overall Score										2.18

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Mr. J. FAYAJUL ARIFEEN	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>CC</i>	<i>U24MPHP11</i>	<i>PRACTICAL - I</i>	<i>45</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives:

Aims to help in estimating physical properties such as the elastic, mechanical, electric and optical properties of different materials using scientific instruments.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement	Cognitive Level
CO1	Express the scientific methods and study the process of measuring different Physical variables	K2
CO2	Practice to explore the field of properties of matter, acoustics, heat and light	K3
CO3	Demonstrate the experiments in electricity and electromagnetics circuits	K4
CO4	Determine the refractive index of liquid and focal length of concave lens	K4
CO5	Construct the characteristics of Zener diode	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6>Create)

(Any 08 Experiments)

1. Young's modulus – Non-uniform bending – pin and microscope.
2. Rigidity modulus – Torsional pendulum – without masses.
3. Compound Pendulum – Determination of 'g' and 'k'.
4. Comparison of viscosities of two different liquids – Burette method.
5. Sonometer – AC frequency using steel wire.
6. Specific heat capacity of a liquid by method of cooling.
7. Post Office box – Temperature coefficient of resistance of a coil.
8. Focal length – R and μ of a long focus concave lens, Combination Method and Auxiliary Lens Method.
9. Spectrometer – Hollow prism – Refractive Index of a liquid.
10. Potentiometer – Calibration of low range voltmeter.
11. Comparison of E.M.F of cells using Ballistic Galvanometer (B.G.).
12. Characteristics of Zener diode.

Books for study:

1. M. N. Srinivasan, S. Balasubramanian and R. Renganathan, A Text book of Practical Physics, Sultan Chand & Sons, New Delhi, 2015.
2. C.C Ouseph, G.Rangarajan - A Text Book of Practical Physics- S. Viswanathan Publisher- Part I (1990) & II (1996).
3. C.C Ouseph, U.J. Rao, V. Vijayendran, Practical Physics and Electronics, S. Viswanathan, Printers & Publishers Private Ltd, Chennai, 2018.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Books for reference:

1. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002).
2. C.L. Arora, B.Sc., Practical Physics, S. Chand and Company, New Delhi.
3. Gupta & Kumar, Practical Physics, Pragati Prakashan, Meerut.

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	2	2	3	1	2	3	3	3	3	2.44
CO2	3	2	3	1	2	2	3	3	2	2.33
CO3	2	2	2	-	2	2	3	2	2	1.88
CO4	3	2	2	-	2	2	3	3	2	2.11
CO5	2	2	3	-	3	3	3	2	2	2.22
Mean Overall Score										2.19

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. M. MOHAMED RAFI	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>SEC</i>	<i>U24SPH101</i>	<i>INTRODUCTORY PHYSICS (FC)</i>	<i>30</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives:

To learn the principles of kinematics and understand the fundamental principles regarding the various thermal and electronics devices.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Recall the concepts of vectors in one-dimensional motion	K1
CO2	Describe the properties and motion of mechanical waves	K2
CO3	Apply the principles of reflection and refraction to explore image formation	K3
CO4	Interpret the basic principles of classical thermodynamics	K4
CO5	Relate elementary mathematics in circuit analysis	K4

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

UNIT I: KINEMATICS

6 Hours

Nature of Physics – vectors and vector addition – components of vectors – displacement, time, and average velocity – instantaneous velocity – average and instantaneous acceleration – freely falling bodies – Problems in above topics.

UNIT II: MECHANICAL WAVES

6 Hours

Types of mechanical waves – periodic waves – mathematical description of a wave: wave function for a sinusoidal wave – graphing the wave function – speed of a transverse wave using Newton's second law of motion – wave interference, boundary conditions and superposition – standing waves on a string – normal modes of a string.

UNIT III: GEOMETRIC OPTICS

6 Hours

Reflection and refraction at a plane surface, reflection at a spherical surface: Image formation of a point object by a spherical mirror – focal point and focal length – convex mirrors – refraction at a spherical surface, thin lenses – properties of a lens – image of an extended object: converging lenses – diverging lenses – lens maker's equation – graphical methods for lenses.

UNIT IV: THERMAL PHYSICS

6 Hours

Temperature and thermal equilibrium – thermometers and temperature scales – gas thermometers and Kelvin scale – thermal expansion – quantity of heat – thermodynamic systems – work done during volume changes – paths between thermodynamic states – internal energy and first law of thermodynamics.

UNIT V: APPLIED PHYSICS

6 Hours

Semiconductor Devices: Diodes, transistors, integrated circuits – LED and Solar cell (Working principle). Electronics: Basic principles of electronic circuits and devices – Full wave rectifier – Amplifier using transistor. Lasers and Fiber Optics: Principles and applications.

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Text Books:

1. Mechanics and Mathematical methods by R. Murugesan, S. Chand Ltd., New Delhi.
2. Optics by R. Murugesan, S. Chand Ltd., New Delhi.
3. Thermal Physics by R. Murugesan, S. Chand Ltd., New Delhi.

Reference Books:

1. Theory of Mechanics by Sadhu Singh, Pearsons Education, India. (Unit I & II).
2. Mechanics by Prof. D.S. Mathur, S. Chand Publications., New Delhi.
3. Theory and Practice of Optics by A.K. Khurana, Elsevier Standard Edition.
4. Concept in Thermal Physics by Stephen J. Blundell – Oxford University Press.
5. Applied Physics by Neeraj Mehta, PHI Learning Pvt Ltd., New Delhi. (Unit V).

Web Resources:

1. <https://spark.iop.org/collections/thermal-physics>
2. <https://seas.harvard.edu/applied-physics>
3. <https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://link.springer.com/journal/339&ved=2ahUKewjgzoy2zsCEAxViVeUKHf59B1kQFnoECBMQAQ&usg=AOvVaw1f1FIVOBwZKklRBKzo00Po>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	3	3	2	-	1	2	3	3	3	2.22
CO2	3	3	2	-	2	1	3	3	3	2.22
CO3	3	3	2	-	1	2	3	3	3	2.22
CO4	3	3	2	-	1	2	3	3	3	2.22
CO5	3	3	3	-	2	1	3	3	3	2.33
Mean Overall Score										2.24

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Mr. A. K. ASLAM TABREZ	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	ISEC	U24SPH102	ENERGY PHYSICS (SBS - I)	30	2	25	75	100

Objectives: The prime goal is to understand the conventional and non-conventional energy sources, their conservation and storage system

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement	Cognitive Level
CO1	Recognize the importance of energy conservation and suggest measures for improving per capita energy consumption	K2
CO2	Relate various solar energy technologies and identify its applications	K3
CO3	Infer wind data and explain the wind energy conversion systems	K4
CO4	Examine various bio-energy technologies and assess their applications	K5
CO5	Identify the energy storage technologies for suitable applications and summarize the concepts and types of batteries	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

UNIT I: INTRODUCTION TO ENERGY SOURCES

6 Hours

Energy consumption as a measure of prosperity – world energy future – energy sources and their availability – conventional energy sources – non-conventional and renewable energy sources – comparison – merits and demerits

UNIT II: SOLAR ENERGY

6 Hours

Introduction – solar constant – solar radiation at the Earth's surface – solar radiation geometry – Solar radiation measurements – solar radiation data – solar energy storage and storage systems – solar pond – solar cooker – solar water heater – solar greenhouse – types of greenhouses – #solar cells[#]

UNIT III: WIND ENERGY

6 Hours

Introduction – nature of the wind – basic principle of wind energy conversion – wind energy data and energy estimation – basic components of Wind Energy Conversion Systems (WECS) – advantages and disadvantages of WECS – applications – #tidal energy[#]

UNIT IV: BIOMASS ENERGY

6 Hours

Introduction – classification – biomass conversion technologies – photosynthesis – fermentation – biogas generation – classification of biogas plants – anaerobic digestion for biogas – wood gasification – advantages & disadvantages.

UNIT V: ENERGY STORAGE

6 Hours

Importance of energy storage- batteries - lead acid battery -nickel-cadmium battery – fuel cells – types of fuel cells – advantages and disadvantages of fuel cells – applications of fuel cells – #hydrogen storage[#].

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self-study component in the End Semester Examinations)

Books for Study:

1. G.D. Rai, Non-Conventional Sources of Energy, Khanna Publishers, 2009, 4th Edn.
2. S P Sukhstme, J K Nayak, Solar Energy, Principles of Thermal Collection and Storage, McGraw Hill, 2008, 3rd Edn.

C. Abdul Hakeem College (Autonomous), Melvisharam.

3. D P Kothari, K P Singal, RakeshRajan, PHI Learning Pvt Ltd, 2011, 2nd Edn.

Books for Reference:

1. John Twidell & Tony Weir, Renewable Energy Resources, Taylor & Francis, 2005, 2nd Edn.
2. S.A. Abbasi and Nasema Abbasi, Renewable Energy sources and their environmental impact, PHI Learning Pvt. Ltd, 2008.
3. M. P. Agarwal, Solar Energy, S. Chand & Co. Ltd., New Delhi, 1982
4. H. C. Jain, Non-Conventional Sources of Energy, Sterling Publishers, 1986.

Web Resources:

1. Introduction To Energy Sources: <https://vikaspedia.in/energy/energy-basics/sources-of-energy>
2. Solar Energy: <https://www.ulaginoli.com/solar-energy/solar-energy-an-introduction/>
3. Energy Storage: <https://www.renhotecev.com/blog/3-types-of-electrical-energy-storage-technologies.html>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	2	3	2	-	3	3	2	-	2	1.88
CO2	2	2	3	-	2	3	3	2	2	2.11
CO3	2	2	3	-	2	3	2	2	2	2.00
CO4	2	2	3	-	3	3	2	-	2	1.88
CO5	3	3	3	-	2	3	2	2	2	2.22
Mean Overall Score										2.01

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
DR. M. MOHAMED RAFI	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>CC</i>	<i>U24MPH201</i>	<i>THERMAL PHYSICS AND STATISTICAL METHODS</i>	<i>75</i>	<i>5</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: The primary goal is to understand the fundamental of kinetic theory of matter, thermometry, laws of thermodynamics and statistical methods and their applications to various systems and processes.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement	Cognitive Level
CO1	Recognize the importance of thermodynamic laws and statistical concepts of physics.	K1
CO2	Explain the nature and transmission of heat in matter and its thermodynamically realistic behaviours.	K2
CO3	Illustrate the physical significance of thermodynamics and recognize the different processes and its impact on our real system.	K3
CO4	Correlate the concepts of statistical thermodynamics and its applications to different cases.	K4
CO5	Validate the thermodynamics and statistical methods in solving the realistic problems	K6

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

UNIT I: KINETIC THEORY OF MATTER

15 Hours

Concept of ideal gas – Kinetic theory of gases – Expression for the pressure exerted by a gas – Brownian motion – Langevin's theory of Brownian motion – Einstein's theory of Brownian motion. Transport phenomena in gases: Molecular collision – Mean free path – Clausius' expression for mean free path.

Thermal conduction – Thermal conductivity of a good conductor – Theory – Determination by Forbes' method – Thermal conductivity of a poor conductor – Theory – Determination by Lee's disc method.

UNIT II: LIQUEFACTION OF GASES AND THERMOMETRY

15 Hours

Cooling by adiabatic expansion – Joule-Thomson expansion – Principle of regenerative cooling – Liquefaction of air by Linde's process – Liquefaction of hydrogen – Liquefaction of Helium by Onne's methods – Helium I & II – Properties of He II – Adiabatic demagnetization.

Thermometry – Types of thermometers – Platinum resistance thermometer – Callendar and Griffith's bridge – standardization and temperature scale – Low and high temperature measurement.

UNIT III: THERMODYNAMICS – I

15 Hours

Thermodynamic system – Zeroth law of thermodynamics – Concept of heat – Thermodynamic Equilibrium – Work: A path dependent function – Internal energy – First law of thermodynamics – Internal energy as a state function.

Application: Specific heats of a gas (V and T independent) – Isochoric and Isobaric process – Adiabatic process – Adiabatic equation of a perfect gas – Isothermal process.

Indicator diagram – Work done during isothermal and adiabatic processes.

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UNIT IV: THERMODYNAMICS – II

15 Hours

Reversible and irreversible processes – Heat engines and its efficiency – Carnot's ideal heat engine – Carnot's cycle and its efficiency – Carnot's engine and refrigerator – Second law of thermodynamics – Carnot's theorem.

Internal combustion engines – Petrol Engine and Diesel engine – Working and its efficiencies - Clausius inequality – Entropy – Change of entropy of a closed irreversible system – Change in entropy in reversible and irreversible processes – The T-S diagram.

UNIT V: STATISTICAL METHODS

15 Hours

Micro and Macrostates – Definition of thermodynamic probability – Degrees of freedom – Phase space – Different types of ensembles – Relation between entropy and probability – Maxwell-Boltzmann energy distribution law – Derivation of Maxwell-Boltzmann statistics – Speed distribution law – Bose-Einstein and Fermi-Dirac statistics as the most probable distributions – Comparison of M-B, B-E and F-D statistics.

Books for study:

1. Heat Thermodynamics and Statistical Physics, Brij Lal and N. Subrahmanyam, S. Chand & Co.
2. Thermal Physics, R Murugesan and Kiruthiga Sivaprasad, S. Chand & Co., New Delhi.
3. Heat and thermodynamics, J B Rajam, S Chand & Co., New Delhi.

Books for Reference:

1. Heat and thermodynamics, D S Mathur, S Chand & Co., New Delhi.
2. Statistical Mechanics, Sathya Prakash and J P Agarwal, Kedar Nath & Ram Nath & Co., Meerut.
3. Thermal Physics, A. Kumar and S.P. Taneja, 2014, R. Chand Publications.
4. Thermal Physics, B.K. Agrawal, Lok Bharti Publications.
5. Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer.

Web Resources:

1. Kinetic theory of gases: <https://www.youtube.com/watch?v=B0uxOH4Bm2M>
2. Thermodynamics: <https://www.youtube.com/watch?v=0murstvco0I>
3. Statistical Physics: <https://www.youtube.com/watch?v=5L5L-Nlvnho>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	3	3	2	1	2	1	3	3	1	2.11
CO2	3	2	2	2	2	1	3	2	1	2.00
CO3	3	3	2	2	2	1	3	2	2	2.22
CO4	3	3	2	1	2	1	3	2	2	2.11
CO5	3	2	3	1	1	1	3	2	3	2.11
Mean Overall Score										2.11

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. S MUNAWAR BASHA	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>CC</i>	<i>U24MPHP21</i>	<i>PRACTICAL - II</i>	<i>45</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives:

Apply several physics concepts to understand properties of matter, heat, sound waves, characteristics of electronic devices, set up experimentation to verify theories and interpret the results.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement	Cognitive Level
CO1	Express the scientific methods and study the process of measuring different Physical variables	K2
CO2	Practice to explore the field of properties of matter, acoustics, heat and light	K3
CO3	Demonstrate the experiments in electricity and electromagnetics circuits	K4
CO4	Determine the frequency of tuning fork and thermal conductivity of bad conductor	K4
CO5	Construct the low range power pack – Bridge rectifier	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

(Any 08 Experiments)

1. Young's modulus – Non-uniform bending – optic lever (Scale and telescope).
2. Rigidity modulus and Moment of inertia – Torsional pendulum – with identical masses.
3. Coefficient of Viscosity of liquid – Graduated burette – Radius of capillary tube by using microscope.
4. Surface tension and interfacial surface tension – drop weight method.
5. Sonometer – Frequency of tuning fork.
6. Thermal conductivity of a bad conductor - Lee's Disc method.
7. Spectrometer – Grating – Minimum deviation method.
8. Potentiometer – Internal resistance of a cell.
9. Figure of merit – Table Galvanometer.
10. Comparison of capacitances using Ballistic Galvanometer (B.G.).
11. m and B_H – Tan C – deflection magnetometer and vibration magnetometer.
12. Construction of low range power pack – Bridge rectifier.

Books for study:

1. M. N. Srinivasan, S. Balasubramanian and R. Renganathan, A Text book of Practical Physics, Sultan Chand & Sons, New Delhi, 2015.
2. C.C Ouseph, G.Rangarajan - A Text Book of Practical Physics- S. Viswanathan Publisher- Part I (1990) & II (1996).
3. C.C Ouseph, U.J. Rao, V. Vijayendran, Practical Physics and Electronics, S. Viswanathan, Printers & Publishers Private Ltd, Chennai, 2018.

Books for reference:

1. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 25th Edition (2002).
2. C.L. Arora, B.Sc., Practical Physics, S. Chand and Company, New Delhi.
3. Gupta & Kumar, Practical Physics, Pragati Prakashan, Meerut.

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Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	2	2	3	1	2	3	3	3	2	2.33
CO2	2	3	2	-	2	2	3	3	2	2.11
CO3	2	3	2	-	2	3	3	3	2	2.22
CO4	2	3	3	-	2	2	3	3	2	2.22
CO5	2	2	3	-	2	3	3	3	2	2.22
Mean Overall Score										2.22

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. M. MOHAMED RAFI	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>ISEC</i>	<i>U24SPH201</i>	<i>ASTROPHYSICS (SBS - II)</i>	<i>30</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: The primary goal is to understand about our universe and its existence based on different theories and to look deeper into our planets and in particular about the sun.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement	Cognitive Level
CO1	Recognize the importance of our planets and their surrounding	K1
CO2	Compare the nature of comets, meteors and asteroids	K2
CO3	Explain the structure of sun and recognize its activities	K2
CO4	Discuss the evolution of stars and its types	K2
CO5	Summarize the different theories on the origin of universe	K3

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

UNIT I: PLANETS

6 Hours

Planets - interior planets – exterior planets – crust, mantle and core of the earth – different region of earth's atmosphere – rotation of the earth – magnetosphere – Van Allen belts – Aurora.

UNIT II: COMETS, METEORS, ASTEROIDS

6 Hours

Composition and structure of comets – Periodic comets – Asteroid – salient features of asteroids – meteors and its use.

UNIT III: SUN

6 Hours

Structure of photosphere, chromosphere, corona – sunspots – solar flares – solar prominences – solar plagues – satellites of planets – structure, phases and their features of moon.

UNIT IV: STARS

6 Hours

Constellations – binary stars – their origin and types of star clusters – Death of stars – Globular clusters – types of variable stars – types of galaxies.

UNIT V: ORIGIN OF UNIVERSE

6 Hours

Big bang theory – pulsating theory – steady state theory – composition of universe expansion – Multiverse and its origin.

Book for study:

1. A. B. Bhattacharya, S. Joradarand R. Bhattacharya, Astronomy and Astrophysics, Infinity Science Press, LLC, 2008.

Books for Reference:

1. K.D. Abyankar, Astrophysics of the solar system, University press, India.
2. Baidyanath Basu, An introduction to Astrophysics, Prentice Hall of India, New Delhi.
3. Prof. P. Devadas, The fascinating Astronomy, Published by Devadas Telescopes, 2, Charkrapani Road, Guindy, Chennai.
4. Elements of Space Physics – R.P. Singhal, PHI.

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Web Resources:

1. Big band theory: <https://www.youtube.com/watch?v=pSHVbLPWA28>
2. Solar System: <https://www.youtube.com/watch?v=e8YzKyot4Pc>
3. Star Formation: <https://www.youtube.com/watch?v=II57XIZ17hE>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	2	3	2	1	2	3	3	2	1	2.11
CO2	3	2	1	2	2	2	3	2	1	2.00
CO3	2	3	2	2	2	1	1	2	2	1.88
CO4	3	2	2	1	2	1	2	1	2	1.77
CO5	3	2	2	1	1	1	2	2	2	1.77
Mean Overall Score										1.91

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. S. MUNAWAR BASHA	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>DSSEC</i>	<i>U24SPH202</i>	<i>BASIC ELECTRONICS (SBS - III)</i>	<i>30</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives:

To learn the characteristics of power semiconductor devices for power electronic circuit applications.

Course Outcomes (COs) and Cognitive Level Mapping

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Recall the fundamentals of semiconductor physics relevant to diodes	K1
CO2	Describe the properties and characteristics of PN Junction diode and FET devices	K2
CO3	Express the different power electronic devices needed for switching and high power control	K3
CO4	Identify the different filter circuits for smooth output of a rectifier	K4
CO5	Construct the voltage and IC regulated power supply for the protection of circuits	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

UNIT I

6 Hours

Semiconductors: Introduction – Intrinsic Semiconductor – Extrinsic Semiconductor – N-Type and P-Type – Conduction in intrinsic Semiconductor – Mass-Action Law – Derivation of Charge densities in N and P-Type Semiconductors – Band gap.

UNIT II

6 Hours

PN Junction diode: Diode current equation – Bridge rectifier and its efficiency. Bipolar Junction Transistor: Common Emitter connection and its characteristics. Field Effect Transistor: Working – Drain and Transfer Characteristics – FET Parameters.

UNIT III

6 Hours

MOSFET: Construction and working of Depletion and Enhancement MOSFETs. SCR: Construction and working of SCR – Characteristics of SCR – SCR Switching. UJT: Construction and working of UJT – Characteristics of UJT.

UNIT IV

6 Hours

Power supply: Introduction – Ordinary D.C Power Supply – Filters – Inductor Filter – Capacitor Filter – π -Filter – Voltage regulation – Minimum load resistance – Regulated Power supply – Low and high voltage regulator.

UNIT V

6 Hours

Zener Diode voltage regulator – Transistor voltage regulator (series and Shunt type) – Series Feedback Voltage regulator – IC Regulators (Fixed and Adjustable).

Text Books:

1. Principles of Electronics by V.K.Mehta and Rohit Mehta, S.Chand & Co., New Delhi.
2. A Text Book of Applied Electronics by R.S.Sedha, S.Chand & Co., New Delhi.
3. Electronic Principles by A.P.Malvino, McGraw Hill Book Company.

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Reference Books:

1. Electronic devices and circuits by Jacob Millman and Christos C. Halkias, Tata McGraw – Hill Edition 1991.
2. Electronic devices and circuits by B. Sasikala and S. Poornachandra, Scitech Publication (India) Pvt. Ltd., Chennai
3. Electronic devices and circuits by Allen Mottershead, Prentice Hall of India Pvt. Ltd., New Delhi.

e-Resources:

1. <https://www.power-and-beyond.com/a-detailed-study-of-intrinsic-vs-extrinsic-semiconductors-a-85ba6f59bd2679844038fa12200f4034/>
2. <https://testbook.com/physics/extrinsic-semiconductor>
3. https://www.electronics-tutorials.ws/diode/diode_3.html
4. <https://testbook.com/physics/bridge-rectifier>

Mapping of Course Outcomes (Cos) with Programme Outcomes (Pos) and Programme Specific Outcomes (PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	Mean
CO1	2	1	1	-	2	2	3	2	2	1.66
CO2	2	2	3	-	2	3	2	3	3	2.22
CO3	2	2	3	-	2	3	2	3	3	2.22
CO4	2	2	3	-	2	3	2	3	3	2.22
CO5	3	3	3	-	2	3	2	3	3	2.44
Mean Overall Score										2.15

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. M. MOHAMED RAFI	Mr. J. FAYAJUL ARIFEEN

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>GEL</i>	<i>U24AMA101</i>	MATHEMATICS - I (ALLIED)	60	4	25	75	100

Objectives:

- To understand basic concepts of matrices and able to apply Cayley-Hamilton theorem.
- To find the solutions of the equation using numerical methods.
- To find the Expansions of $\sin^n \theta$, $\cos^n \theta$, in a series of powers of $\sin \theta$ and $\cos \theta$ and expansions of $\sin (n\theta)$ and $\cos (n\theta)$ in a series sines and cosines of multiples of θ .

Course Outcomes (COs) and Cognitive Level Mapping:

Cos	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Using either binomial or exponential or logarithmic series find the sum of the given series.	K2
CO2	Apply Cayley Hamilton Theorem to find inverse of matrices.	K3
CO3	Estimate numerical solutions using different concepts of finite differences.	K5
CO4	Evaluate the powers and multiples of trigonometric functions in terms of sine and cosine.	K5
CO5	Determine the nth derivatives and examine maxima and minima of functions of two variables.	K5

Syllabus:

Unit – I

(12 Hours)

Summation of series: Binomial series – Exponential series – Logarithmic series - Simple Problems.

Chapter2: Sections: 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3.

Unit – II

(12 Hours)

Matrices: Symmetric–Skew-Symmetric – Hermitian – Skew – Hermitian Orthogonal and Unitary matrices – Cayley-Hamilton theorem (without proof) – Verification –Computation of inverse of matrix using Cayley – Hamilton theorem.

Chapter4: Sections: 4.1.1 – 4.1.6, 4.5.2 and 4.5.3.

Unit – III

(12 Hours)

Numerical Methods: Newton's method of find a root approximately. Finite Differences: Interpolation: Operators $\Delta, \nabla, E, E^{-1}$ differencetables. Interpolation formulae: Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula.

Chapter3:Sections3.4.1.Chapter5: Sections:5.1 and 5.2.

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Unit – IV

(12 Hours)

Trigonometry: Expansions of $\sin^n \theta$, $\cos^n \theta$, in a series of powers of $\sin \theta$ and $\cos \theta$ - Expansions of $\sin (n\theta)$ and $\cos (n\theta)$ in a series sines and cosines of multiples of “ θ ”-Expansions of $\sin \theta$, $\cos \theta$ and $\tan \theta$ in a series of powers of “ θ ”-Hyperbolic and inverse hyperbolic functions.

Chapter6:Section 6.1–6.3

Unit – V

(12 Hours)

Differential Calculus: Successive differentiation, nth derivatives, Leibnitz theorem (without proof) and applications, Jacobians, maxima and minima of functions of two variables –Simple problems.

Chapter1, Section1.1to1.3.1

Text Books:

Allied Mathematics, Volume I and Volume II by P.Duraipandian and S.Udayabaskaran, Muhil Publications.

Volume I: Unit I – IV

Volume II: Unit V.

Reference Books:

1. Ancillary Mathematics by S.Narayanan and T.K. Manickavachagom Pillay, S.Viswanathan Pinters,1986,Chennai.

2. Allied Mathematics by A. Singaravelu.

3. Allied Mathematics by P.R. Vittal.

E-Resources:

https://onlinecourses.swayam2.ac.in/nos24_sc35/preview

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	-	3	3	2
CO2	3	3	3	2	-	-	2	3	3
CO3	2	3	2	3	-	-	2	3	3
CO4	2	3	3	2	-	-	3	3	2
CO5	3	2	3	2	-	-	2	3	2
Mean	2.6	2.6	2.8	2.2	-	-	2.4	3	2.4

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ASF & SMR	HOD

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Syllabus for B.Sc., Physics effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24AMA201	MATHEMATICS - II (ALLIED)	60	4	25	75	100

Objectives:

- To discuss and analyze the concept of gradient, divergence and curl and its properties.
- To be familiar with Green's, Gauss and Stoke's theorem in vector integrals.
- To find the solution of first order linear partial differential equations.
- To solve the ordinary differential equations by using Laplace and Inverse Laplace Transform.

Course Outcomes (COs) and Cognitive Level Mapping:

Cos	CO Statement (After completing the course, the students will be able to)	Cognitive level
CO1	Analyze the concept of gradient, divergence and curl and its properties.	K4
CO2	Evaluate the certain vector integrals using Green's, Gauss and Stoke's theorem.	K5
CO3	Solve first order partial differential equations.	K3
CO4	Evaluate certain integrals using Laplace transform Techniques.	K5
CO5	Solve the ordinary differential equations by using Laplace Transform	K3

Syllabus:

Unit – I

(12 Hours)

Differentiation of Vectors

Differentiation of vectors – Differential operators – Solenoidal – Irrotational – Directional derivative – Gradient – Divergence and curl – Formula involving operator ∇ .

(Chapter 8: 8.1 to 8.4.4)

Unit – II

(12 Hours)

Integration of Vectors

Line integrals – Surface integrals – Volume integrals – Statements of Gauss divergence, Green's, Stoke's theorems and its applications – verifications.

(Chapter 8: 8.5 to 8.6.3)

Unit – III

(12 Hours)

Partial Differential Equations

Formation of partial differential equations by eliminating arbitrary constants and arbitrary functions – Solutions of standard types of first order equations: $f(p, q) = 0$, $f(x, p) = g(y, q)$, $f(x, p, q) = 0$, $f(y, p, q) = 0$, $f(z, p, q) = 0$, $z = px + qy + f(p, q)$ - Lagrange's linear equations

(Chapter 6: 6.1 to 6.4)

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Unit – IV

(12 Hours)

Laplace Transforms

Definition – Laplace transforms- Basic results in Laplace Transform- Properties of Laplace Transform – Definite integrals from Laplace Transform.

(Chapter 7: 7.1.1 to 7.1.5)

Unit – V

(12 Hours)

Inverse Laplace transforms

Inverse Laplace transforms – Linear Property – Basic results – Properties – Applications to Solving differential equations.

(Chapter 7: 7.2 to 7.3)

Text Books:

Allied Mathematics, Volume II by P.Duraipandian and S.Udayabaskaran, Muhil Publications.

Reference Books:

1. P. Balasubramaniam, K. G. Subramanian, Ancillary Mathematics, Volume – I, Tata McGraw – Hill publishing company limited, New Delhi, 1996.
2. P. Durai Pandian, S. UdayaBaskaran, Allied Mathematics, Volume – I, Muhil publishers, 1st Edition, Chennai, 1997.
3. P. Kandsamy and K. Thilagavathy, Allied Mathematics volume – I, Volume – II, S. Chand & Company, New Delhi, 2004.
4. Shanti Narayan, P.K. Mittal, Differential Calculus, S. Chand & Co, New Delhi, 2005.
5. A. Singaravelu, Allied Mathematics, Meenakshi Agency, Chennai, 2001.
6. P.R. Vittal, Allied Mathematics, Margham Publications, Chennai, 1999.

E-Resources:

https://onlinecourses.swayam2.ac.in/aic22_ts29/preview

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	-	3	3	2
CO2	2	3	3	2	-	-	2	3	3
CO3	2	3	3	3	-	-	2	3	3
CO4	2	3	3	2	-	-	3	3	2
CO5	3	2	3	2	-	-	2	3	2
Mean	2.4	2.6	3	2.2	-	-	2.4	3	2.4

Prepared by	Verified by
ASF	HOD

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Syllabus for B.Sc., Physics effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24AMAP21</i>	<i>ALLIED MATHEMATICS PRACTICAL</i>	<i>20</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives:

- To include the computer knowledge.
- To introduce the open source softwares (Scilab, Sagemath, etc).
- To train in the preparation of various coding.

Course Outcomes (COs) and Cognitive Level Mapping:

Cos	CO Statement (After completing the course, the students will be able to)	Cognitive level
CO1	Find summation of series.	K1
CO2	Find roots and vectors.	K1
CO3	Evaluate matrix calculation.	K5
CO4	Evaluate matrix Jacobians.	K5
CO5	Solve differential equations.	K6

Syllabus:

1. Computation of Various matrix operations.
2. Find a root of a polynomial.
3. Basic Results in polynomial (Expand, factor, simplify coefficient, etc.).
4. Jacobians.
5. Maxima and Minima of functions of one variables.
6. Vectors.
7. Limit of a function.
8. Differentiation.
9. Integration.
10. First order Ordinary differential equations.
11. Second order Ordinary differential equations.
12. Plots.

Reference Books:

Introduction to SCilab, Michael Baudin From Scilab Consortin, 2010.

e-Resources:

https://onlinecourses.swayam2.ac.in/aic20_sp38/preview

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Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
CO1	2	3	3	3	2	-	2	3	2
CO2	3	2	3	2	2	-	3	3	2
CO3	3	3	2	3	3	-	2	2	3
CO4	2	2	3	3	3	-	3	2	3
CO5	2	2	3	2	2	-	2	2	3
Mean	2.4	2.4	2.8	2.6	2.4	-	2.4	2.4	2.6

Prepared by	Verified by
ASF	HOD