



MANONMANIAM SUNDARANAR UNIVERISTY,  
TIRUNELVELI-12

## SYLLABUS

### UG - COURSES – AFFILIATED COLLEGES

Course Structure for B. Sc. Mathematics

(Choice Based Credit System)

(with effect from the academic year 2024-2025 onwards )



Semester-I				
Part	Subject Status	Subject Title	Subject Code	Credit
I	LANGUAGE	TAMIL/MALAYALAM/HINDI	F1TL11/ F1MY11/ F1HD11	3
II	ENGLISH	ENGLISH	F2EN11	3
III	CORE	ALGEBRA & TRIGONOMETRY	FCMA11	4
III	CORE	DIFFERENTIAL CALCULUS	FCMA12	4
III	ELECTIVE	ALLIED PHYSICS I	FEPH11	3
		ALLIED PHYSICS I PRACTICAL	FEPHP1	2
IV	SEC 1	MATHEMATICS FOR COMPETITIVE EXAMINATION 1	FSMA11	2
IV	FC	BRIDGE MATHEMATICS	FFMA11	2



**Total Marks: 100 Internal Exam: 25 marks + External Exam: 75 marks**

**A. Scheme for internal Assessment:**

Maximum marks for written test: **20 marks**

**3 internal tests**, each of **1 hour** duration shall be conducted every semester.

To the average of the **best two** written examinations must be added the marks scored in. The **assignment** for 5 marks.

The break up for internal assessment shall be:

Written test- 20 marks; Assignment -5 marks Total - 25 marks

**B. Scheme of External Examination**

**3 hrs.** examination at the end of the semester

A – Part : 1 mark question two - from each unit

B – Part : 5 marks question one - from each unit

C – Part : 8 marks question one - from each unit

➤ **Conversion of Marks into Grade Points and Letter Grades**

S.No	Marks	Letter Grade	Grade point (GP)	Performance
1	90-100	O	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	A	8	Very Good
4	60-69	B+	7	Good
5	50-59	B	6	Above Average
6	40-49	C	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

➤ **Cumulative Grade Point Average (CGPA)**

$$CGPA = \frac{\Sigma (GP \times C)}{\Sigma C}$$

- **GP** = Grade point, **C** = Credit
- CGPA is calculated only for Part-III courses
- CGPA for a semester is awarded on cumulative basis

➤ **Classification**

- First Class with Distinction : CGPA  $\geq$  7.5\*
- First Class : CGPA  $\geq$  6.0
- Second Class : CGPA  $\geq$  5.0 and  $<$  6.0
- Third Class : CGPA  $<$  5.0



## பொதுத்தமிழ் 1

### தமிழ் இலக்கிய வரலாறு 1

அலகு 1: தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம்.

#### 1. இலக்கணம்:

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

#### ஆ. மொழிப் பயிற்சி - ஒற்றுப்பிழை தவிர்த்தல்

- வல்லினம் மிகும் இடங்கள்
- வல்லினம் மிகா இடங்கள்
- ஈரொற்று வரும் இடங்கள்
- ஒரு, ஓர் வரும் இடங்கள்
- அது, அஃது வரும் இடங்கள்
- தான், தாம் வரும் இடங்கள்

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

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

#### அலகு 2: சங்க இலக்கியம்

##### எட்டுத்தொகை

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

##### பத்துப்பாட்டு:

1. முல்லைப்பாட்டு (முழுவதும்)

#### அலகு 3: அற இலக்கியம்

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

#### அலகு 4: காப்பிய இலக்கியம்

1. சிலப்பதிகாரம் - வழக்குரைகாதை



2. மணிமேகலை - பாத்திரம் பெற்ற காதை
3. பெரியபுராணம்- பூசலார் நாயனார்புராணம்
4. கம்பராமாயணம்-குகப் படலம்
5. சீறாப்புராணம் - மாணுக்குப் பிணை நின்ற படலம்
6. இயேசு காவியம்-ஊதாரிப்பிள்ளை

**அலகு 5: பக்தி இலக்கியமும், பகுத்தறிவு இலக்கியமும்**

**பக்தி இலக்கியம்:**

1. திருநாவுக்கரசர் தேவாரம்-நாமார்க்கும் குடியல்லோம் எனத் தொடங்கும் பாடல் மட்டும்
2. மாணிக்கவாசகர் திருவாசகம் - நமச்சிவாய வா ஆழ்க நாதன்தான் வாழ்க முதல் சிரம்குவிவார் ஓங்குவிக்கும் சீரோன் கழல் வெல்க வரை
3. பொய்கையாழ்வார்-வையந் தகனியா வர்கடலே
4. பூதத்தாழ்வார் - அன்பே தகனியா
5. பேயாழ்வார் - திருக்கண்டேன் பொன்மேனி கண்டேன்
6. ஆண்டாள் - திருப்பாவை மார்களித் திங்கள் (முதல் பாடல் )

**பகுத்தறிவு இலக்கியம்;**

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

**Reference Books:**

- மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அக்காதமி, புதுடெல்லி
- மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
- தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை;.
- தமிழ் இளகிய வரலாறு - முனைவர் சிற்பி பாலசுப்ரமணியன், முனைவர்.சொ. சேதுபதி
- புதி யதமிழ் இலக்கிய வரலாறு - முனைவர் சிற்பி பாலசுப்ரமணியன், நீல. பத்மநாபன்

**Web Sources:**

- [இணைய தமிழ் நூலகம் - சென்னை நூலகம் - Online Tamil Library - ChennaiLibrary.com](http://இணைய தமிழ் நூலகம் - சென்னை நூலகம் - Online Tamil Library - ChennaiLibrary.com)
- [முகப்பு - சிறுகதைகள் \(sirukathaigal.com\)](http://முகப்பு - சிறுகதைகள் (sirukathaigal.com))
- [www.tamilvirtualuniversity.org](http://www.tamilvirtualuniversity.org)
- [Buy tamil books online 10% to 50% discount, Tamil Novels, Tamil Audio Books online - Buy tamil books online - Established 2010 \(noolulagam.com\)](http://Buy tamil books online 10% to 50% discount, Tamil Novels, Tamil Audio Books online - Buy tamil books online - Established 2010 (noolulagam.com))
- [www.katuraitamilblogspot.com](http://www.katuraitamilblogspot.com)



# MALAYALAM

## PAPER I- PROSE, COMPOSITION AND TRANSLATION

### Unit 1

This unit focus on the importance of Malayalam fiction, -the origin and development of Malayalam Short story –renaissance in short story—Thakazhi-Basheer-Karoor- -Navothana katha:

For detailed study:

1. Marappavakal- Karoor Neelakantappilla.
2. Uthuppante kinar.-Karoor Neelakantappilla.
3. Ezhunnallathuduty-Karoor Neelakantappilla.

### Unit II

Kathayum adhunikathayum- To familiarize – Romanticism -Modernism, Plot and narration in modern short stories

For detailed study:

1. Neippayasam –Madhavikutty
2. Kadaltheerathu-.O.V.Vijayan
3. Radha radhamathram-M.Mukundan

### Unit III

Samakala katha– Post modernism- Globalization-Women –Dalit- Cyber – Environmental issues in short stories-

The theme, structure and narrative style of the authors -comparison-

For detailed study:

1. Viyarppadayalanganl-Sara Joseph
2. Jwala - Priya .A.S
3. Vartha sareeram –Santhosh Echikkanam
4. Otta vaikkol viplavam –V.J.James

### Unit IV

This unit briefs the history of Malayalm Novel- major works, romantic period- of M T Vasudevan Nair , narrative style of Nalukettu- craft and characterization in Nalukettu

### Unit V

This unit focus on Translation, Word level and syntactic level and also discuss the writing style of Essay- introduce proverbs and paraphrasing in Malayalam

### Recommended Texts

1. Marappavakalum mattu kathakalum – Karoor Neelakantapilla. (only 3 stories (a.)Marappavakal (b)Uthuppante kinar (c) Ezhunnallathuduty))
2. Nalukettu- .Novel -M.T.Vasudevan Nair

### Reading list (print and online)

1. Adhunika Malayala Sahithya Charithram Prasthanangalilude – Dr. K.M.George ( Ed.)
2. Cherukadha Innale Innu - M.Achuthan
3. Kadha Thedunna Kadha - N.Prabhakaran
4. M.T. Vakkinte Vismayam – V.R.Sudheesh
5. Kadhayum Kalavum –K.S.Ravikumar
6. Malayala Novalilee Desakaalanganl- E. Ramkrishnan
7. Maranunna Malayala Noval- K.P. Appan
8. Andhanaya Daivam- P.K.Rajasekharan
9. Shyalee shilppam- Dr.K.M. Prabhakra Warier
10. Bhasha gadhyam- C.V. Vasudeva Bhattathiri
11. Karur Kadha patanam- M.M.Basheer



# **HINDI - Hindi ka Samanya Gyan, Vyakaran aur Nibandh**

## **Unit I**

### **Buniyadi Hindi**

- Swar
- Vyanjan
- Barah Khadi
- Shabd aur
- Vakya Rachna

## **Unit II**

### **Hindi Shabdavali**

- Rishto ke Naam
- Gharelu padartho ke Naam

## **Unit III**

### **Vyakaran**

- Sadharan Vakya aur Sangya
- Sarvanam
- Visheshan
- Kriya aadi shabdo ka prayog

## **Unit IV**

### **Chote Gadyansh ka Pathan**

- Bacho ki Kahaniya (1 to 5)
- Patra-Patrikao mein prakashit Gadyansho ka Pathan

## **Unit V**

### **Nibandh**

- Sant Tiruvalluvar
- E.V.R Thandai Periyar
- Naari Sashaktikaran
- Paryavaran Sanrakshan
- Vibhinna pratiyogi parikshao ke bare mein jaankari dena

Pratiyogi priksa par adharit nibandho dwara bhasha ki kshamta badhane vale prashikshan kary.

### **Reference Books**

1. Hindi ke Avyay Vakyansh – Chaturbhuji Sahay
2. Subodh Hindi Vyakaran – Phoolchand Jain
3. Sankshipt Hindi Vyakaran – Kamta Prasad
4. Vyavaharik Hindi – Nagappa
5. Abhinav Hindi Vyakaran – Nagappa
6. Saral Hindi Vyakaran – Shyamchandra Kapur
7. Vyakaran Pradeep – Ramdev
8. Laghu Bal Kathaye – Ramashankar



## 9. Manoranjak Kahaniya – Premchand

## 10. CONCISE GRAMMAR OF THE HINDI LANGUAGE - H.C Scholberg

## 11. Hindi Grammar – Edwin Greaves

**Related Online Contents** (MOOCs, SWAYAM, NPTEL, YouTube, Websites, etc.)

1. [1. fr#oYyqoj%https://bharatdiscovery.org/india/%E0%A4%A4%E0%A4%BF%E0%A4%B0%E0%A5%81%E0%A4%B5%E0%A4%B2%E0%A5%8D%E0%A4%B2%E0%5%81%E0%A4%B5%E0%A4%B0#:~:text=%E0%A4%A4%E0%A4%BF%E0%A4%B%E0%A5%81%E0%A4%B5%E0%A4%B2%E0%A5%8D%E0%A4%B2%E0%A5%81%E0%A4%B5%E0%A4%B0%20\(%E0%A4%85%E0%A4%82%E0%A4%97%E0%5%8D%E0%A4%B0%E0%A5%87%E0%A4%9C%E0%A4%BC%E0%A5%80%3A%20Thiruvallur\)%20%E0%A4%A6%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%BF%E0%A4%A3,%E0%A4%AA%E0%A4%BF%E0%A4%A4%E0%A4%BE%20%E0%A4%AE%E0%A5%87%E0%A4%82%20%E0%A4%B5%E0%A4%BF%E0%A4%B6%E0%A5%8D%E0%A4%B5%E0%A4%BE%E0%A4%B8%20%E0%A4%B0%E0%A4%96%E0%A4%A4%E0%A5%87%20%E0%A4%A5%E0%A5%87%E0%A5%A4](https://bharatdiscovery.org/india/%E0%A4%A4%E0%A4%BF%E0%A4%B0%E0%A5%81%E0%A4%B5%E0%A4%B2%E0%A5%8D%E0%A4%B2%E0%5%81%E0%A4%B5%E0%A4%B0#:~:text=%E0%A4%A4%E0%A4%BF%E0%A4%B%E0%A5%81%E0%A4%B5%E0%A4%B2%E0%A5%8D%E0%A4%B2%E0%A5%81%E0%A4%B5%E0%A4%B0%20(%E0%A4%85%E0%A4%82%E0%A4%97%E0%5%8D%E0%A4%B0%E0%A5%87%E0%A4%9C%E0%A4%BC%E0%A5%80%3A%20Thiruvallur)%20%E0%A4%A6%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%BF%E0%A4%A3,%E0%A4%AA%E0%A4%BF%E0%A4%A4%E0%A4%BE%20%E0%A4%AE%E0%A5%87%E0%A4%82%20%E0%A4%B5%E0%A4%BF%E0%A4%B6%E0%A5%8D%E0%A4%B5%E0%A4%BE%E0%A4%B8%20%E0%A4%B0%E0%A4%96%E0%A4%A4%E0%A5%87%20%E0%A4%A5%E0%A5%87%E0%A5%A4)

2. [2. bZ-os-jkelkeh  
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3. [3. ukjh l'kfDrdj.k%  
<https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4>](https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4)

4. [4. i;kZoj.k laj{k.k%  
<https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4>](https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4)

5. [5. i;kZoj.k laj{k.k%  
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6. [6. i;kZoj.k laj{k.k%  
<https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4>](https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4)

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<https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4>](https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4)

8. [8. i;kZoj.k laj{k.k%  
<https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4>](https://www.hindikiduniya.com/essay/women-empowerment-essayinhindi/#:~:text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8D%E0%A4%AF%E0%A4%BE%20%E0%A4%B9%E0%A5%88%20%3F&text=%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%95%E0%A5%8B%20%E0%A4%AC%E0%A5%87%E0%A4%B9%E0%A4%A6%20%E0%A4%86%E0%A4%B8%E0%A4%BE%E0%A4%A8,%E0%A4%B8%E0%A4%95%E0%A5%8D%E0%A4%B7%E0%A4%AE%20%E0%A4%AC%E0%A4%A8%E0%A4%BE%E0%A4%A8%E0%A4%BE%20%E0%A4%AE%E0%A4%B9%E0%A4%BF%E0%A4%B2%E0%A4%BE%20%E0%A4%B8%E0%A4%B6%E0%A4%95%E0%A5%8D%E0%A4%A4%E0%A4%BF%E0%A4%95%E0%A4%B0%E0%A4%A3%20%E0%A4%B9%E0%A5%88%E0%A5%A4)

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## **PAPER II –GENERAL ENGLISH - I**

### **Learning Objectives**

- To enable learners to acquire self awareness and positive thinking required in various life situations.
- To help them acquire the attribute of empathy
- To assist them in acquiring creative and critical thinking abilities
- To enable them to learn the basic grammar
- To assist them in developing LSRW skills

### **Unit I**

#### **SELF-AWARENESS (WHO)&POSITIVE THINKING (UNICEF)**

##### **Life Story**

- 1.1 Chapter 1 from Malala Yousafzai, I am Malala
- 1.2 An Autobiography or The Story of My Experiments with Truth (Chapters 1, 2 & 3) M.K.Gandhi

##### **Poem**

- 1.3 Where the Mind is Without Fear – Gitanjali 35 – Rabindranath Tagore
- 1.4 Love Cycle – Chinua Achebe

### **Unit II**

#### **EMPATHY**

##### **Poem**

- 2.1 Nine Gold Medals – David Roth
- 2.2 Alice Fell or poverty – William Wordsworth

##### **Short Story**

- 2.3 The School for Sympathy – E.V. Lucas
- 2.4 Barn Burning – William Faulkner

### **Unit III**

#### **CRITICAL & CREATIVE THINKING**

##### **Poem**

- 3.1 The Things That Haven't Been Done Before – Edgar Guest
- 3.2 Stopping by the Woods on a Snowy Evening – Robert Frost

##### **Readers Theatre**

- 3.3 The Magic Brocade – A Tale of China
- 3.4 Stories on Stage – Aaron Shepard (Three Sideway Stories from Wayside School" by Louis Sachar)

### **Unit IV**

#### **Part of Speech**

- 4.1 Articles
- 4.2 Noun
- 4.3 Pronoun
- 4.4 Verb
- 4.5 Adverb
- 4.6 Adjective
- 4.7 Preposition



**Unit V****Paragraph and Essay Writing**

- 5.1 Descriptive
- 5.2 Expository
- 5.3 Persuasive
- 5.4 Narrative

**Text books (Latest Editions)**

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

**Web Resources**

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

**ALGEBRA & TRIGONOMETRY****Objectives of the Course**

- Basic ideas on the theory of equations and to find numerical solution of an equation
- Knowledge to find expansions of trigonometry functions, solve theoretical and applied problems.

**UNIT I**

Reciprocal Equations – Standard form–Increasing or decreasing the roots of a given equation– Removal of terms–Related problems. (Book 1- Chapter 6: Sections - 16 to 19)



**UNIT II**

Symmetric function of roots – Sum of powers of the roots of an equation – Newton's theorem – Approximate solutions of roots of polynomials – Horner's method – General solutions of the cubic equation – Cardan's method – Trigonometrical method – Related problems. (Book 1: Chapter 6: Sections - 12 to 14, 30, 34)

**UNIT III**

Summation of Series: Binomial–Exponential–Logarithmic series (Theorems without proof) – Approximations – Related problems. (Book 1- Chapter 3: Sections -10, 14: Chapter 4: Sections -3, 5, 7, 9, 11)

**UNIT IV**

Expansions of  $\sin n\theta$ ,  $\cos n\theta$  in powers of  $\sin\theta$ ,  $\cos\theta$  -Expansion of  $\tan n\theta$  in terms of  $\tan\theta$ , Expansions of  $\cos n\theta$ ,  $\sin n\theta$ ,  $\cos m\theta \sin n\theta$ –Expansions of  $\tan(\theta_1+\theta_2+\dots+\theta_n)$ – Expansions of  $\sin\theta$ ,  $\cos\theta$  and  $\tan\theta$  in terms of  $\theta$  –related problems. (Book 2 - Chapter 3)

**UNIT V**

Hyperbolic functions – Relation between circular and hyperbolic functions Inverse hyperbolic functions, Logarithm of complex quantities–Related problems. (Book 2 - Chapter 4, Chapter 5: Section - 5)

**Recommended Text**

1. T.K.Manicavachagom Pillay, T.Natarajan and K.S.Ganapathy, Algebra Vol I, S. Viswanathan (Printers & Publishers) Pvt. Ltd., 2017.
2. S.Narayanan and T.K.Manicavachagom Pillay, Trigonometry, S. Viswanathan (Printers & Publishers) Pvt. Ltd., 2009.

**Reference Books**

1. I.W.S.Burnstine and A.W.Panton, Theory of equations.
2. David C. Lay, Linear Algebra and its Applications, 3rd Ed., Pearson Education Asia, Indian Reprint, 2007.
3. G.B.Thomas and R.L.Finney, Calculus, 9th Ed., Pearson Education, Delhi, 2005.
4. C. V. Durell and A. Robson, Advanced Trigonometry, Courier Corporation, 2003.
5. J.Stewart, L.Redlin, and S.Watson, Algebra and Trigonometry, Cengage Learning, 2012.
6. Calculus and Analytical Geometry, G.B. Thomas and R.L.Finny, Pearson Publication, 9<sup>th</sup> Edition, 2010.

**Website and e-Learning Source**

1. <https://nptel.ac.in>



# DIFFERENTIAL CALCULUS

## Objectives of the Course

- The basic skills of differentiation, successive differentiation, and their applications.
- Basic knowledge on the notions of curvature, evolutes, involutes and polar co-ordinates and in solving related problems.

## UNIT I

Successive Differentiation: Introduction (Review of basic concepts) – The  $n$ th derivative – Standard results – Trigonometrical transformation – Formation of equations involving derivatives – Leibnitz formula for the  $n$ th derivative of a product. (Chapter 3: Sections - 1.1 to 1.6, 2.1)

## UNIT II

Partial Differentiation: Partial derivatives – Successive partial derivatives – Function of a function rule – Total differential coefficient – A special case – Implicit functions. (Chapter 8: Sections - 1.1 to 1.5)

## UNIT III

Partial Differentiation (Continued): Homogeneous functions – Partial derivatives of a function of two variables – Maxima and Minima of two variables. (Chapter 8: Sections - 1.6, 1.7, 4 and 5)

## UNIT IV

Envelope: Method of finding the envelope–Another definition of envelope – Envelope of family of curves which are quadratic in the parameter. (Chapter 10: Sections - 1.1 to 1.4)

## UNIT V

Curvature: Definition of Curvature – Circle, Radius and Centre of Curvature – Evolutes and Involute – Radius of Curvature in Polar co-ordinates. (Chapter 10: Sections - 2.1 to 2.6)

## Recommended Text

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

## Reference Books

1. R.Courant and F. John, Introduction to Calculus and Analysis (Volumes I & II), Springer-Verlag, New York, Inc., 1989.
2. T. Apostol, Calculus, Volumes I and II.
3. S. Goldberg, Calculus and mathematical analysis.
4. H. Anton, I. Birens and S. Davis, Calculus, John Wiley and Sons, Inc., 2002.



5. G.B.Thomas and R.L.Finney, Calculus, Pearson Education, 2010.
6. M.J. Strauss, G.L. Bradley and K.J. Smith, Calculus, 3<sup>rd</sup> Ed., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.

### Website and e-Learning Source

1. <https://nptel.ac.in>

## ALLIED PHYSICS – I

### COURSE OBJECTIVES

- To impart basic principles of Physics that which would be helpful for students who have taken programmes other than Physics.

### UNIT-I

**WAVES, OSCILLATIONS AND ULTRASONICS:** simple harmonic motion (SHM) – composition of two SHMs at right angles (periods in the ratio 1:1) – Lissajous figures – uses – laws of transverse vibrations of strings – determination of AC frequency using sonometer (steel and brass wires) – ultrasound – production – piezoelectric method – application of ultrasonic in medical field.

### UNIT-II

**PROPERTIES OF MATTER:** Elasticity: elastic constants – bending of beam – theory of non- uniform bending – determination of Young's modulus by non-uniform bending – energy stored in a stretched wire – torsion of a wire – determination of rigidity modulus by torsional pendulum

Viscosity: streamline and turbulent motion – critical velocity – coefficient of viscosity – Poiseuille's formula

Surface tension: definition – molecular theory – droplets formation–shape, size and lifetime– drop weight method

### UNIT-III

**HEAT AND THERMODYNAMICS:** Joule-Kelvin effect – Joule-Thomson porous plug experiment – theory – temperature of inversion – thermodynamic system – thermodynamic equilibrium – laws of thermodynamics – heat engine – Carnot's cycle – efficiency – entropy – change of entropy in reversible

### UNIT-IV

**ELECTRICITY AND MAGNETISM:** potentiometer – principle – measurement of thermo emf using potentiometer – magnetic field due to a current carrying conductor – Biot-Savart's law – field along the axis of the coil carrying current – peak, average and RMS values of ac current and voltage – power factor and current values in an AC circuit - fuses and circuit breakers in houses



**UNIT-V**

**DIGITAL ELECTRONICS AND DIGITAL INDIA:** logic gates, OR, AND, NOT, NAND, NOR, EXOR logic gates – universal building blocks – Boolean algebra – De Morgan's theorem – verification – overview of Government initiatives: semiconductor laboratories under Dept. of Space – an introduction to Digital India

**TEXT BOOKS**

1. R.Murugesan (2001), Allied Physics, S. Chand and Co, New Delhi.
2. Brijlal and N.Subramanyam (1994), Waves and Oscillations, Vikas Publishing House, New Delhi.
3. Brijlal and N.Subramaniam (1994), Properties of Matter, S.Chand and Co., New Delhi.
4. J.B.Rajam and C.L.Arora (1976). Heat and Thermodynamics (8th edition), S.Chand and Co., New Delhi.
5. R.Murugesan(2005), Optics and Spectroscopy, S.Chand and Co, New Delhi.
6. A.Subramaniam, Applied Electronics 2nd Edn., National Publishing Co., Chennai.

**REFERENCE BOOKS**

1. Resnick Halliday and Walker (2018). Fundamentals of Physics (11th edition), John Wiley and Sons, Asia Pvt.Ltd., Singapore.
2. V.R.Khanna and R.S.Bedi (1998), Textbook of Sound 1<sup>st</sup> Edn. Kedharnaath Publish and Co, Meerut.
3. N.S.Khare and S.S.Srivastava (1983), Electricity and Magnetism 10<sup>th</sup> Edn., Atma Ram and Sons, New Delhi.
4. D.R.Khanna and H.R. Gulati (1979). Optics, S. Chand and Co. Ltd., New Delhi.
5. V.K.Metha (2004). Principles of electronics 6<sup>th</sup> Edn. S.Chand and company.

**WEB RESOURCES**

1. [https://youtu.be/M\\_5KYncYNyc](https://youtu.be/M_5KYncYNyc)
2. <https://youtu.be/ljJLJgIvaHY>
3. [https://youtu.be/7mGqd9HQ\\_AU](https://youtu.be/7mGqd9HQ_AU)
4. <https://youtu.be/h5jOAw57OXM>
5. <https://learningtechnologyofficial.com/category/fluid-mechanics-lab/>
6. <http://hyperphysics.phy-astr.gsu.edu/hbase/permot2.html> <https://www.youtube.com/watch?v=gT8Nth9NWPM> <https://www.youtube.com/watch?v=9mXOMzUruMQandt=1> <https://www.youtube.com/watch?v=m4u-SuaSu1sandt=3> <https://www.biolinscientific.com/blog/what-are-surfactants-and-how-do-they-work>



## ALLIED PRACTICAL– I

### COURSE OBJECTIVES

- Apply various physics concepts to understand Properties of Matter and waves, set up experimentation to verify theories, quantify and analyse, able to do error analysis and correlate results

### Minimum of SIX Experiments from the list:

1. Young's modulus by non-uniform bending using pin and microscope
2. Young's modulus by uniform bending using optic lever, scale and telescope
3. Rigidity modulus by torsional oscillations without mass
4. Verification of Newton's Law of Cooling
5. Co-efficient of viscosity - Stoke's method
6. Surface tension and interfacial Surface tension – drop weight method
7. index of prism using spectrometer
8. Verification of laws of transverse vibrations using sonometer
9. Calibration of low range voltmeter using potentiometer
10. Thermo emf using potentiometer
11. Thickness of a wire using air wedge
12. Construction of AND, OR, NOT gates using diodes and transistor

Note : Use of digital balance, digital screw gauge, digital calipers are permitted

## MATHEMATICS FOR COMPETITIVE EXAMINATION I

### Objectives of the Course

- To learn the techniques for solving aptitude problems and to enable the students to prepare themselves for various competitive examinations.

**UNIT I:** Simplification – Averages.

**UNIT II:** Problems on Numbers.

**UNIT III:** Profit and Loss.

**UNIT IV:** Ratio and proportion.

**UNIT V:** Partnership – Percentages.

### Reference Books

1. R.S. Agarwal- Objective arithmetic, Published by S.Chand & Co Ltd., 2018.

### Recommended Text

1. R.S. Agarwal- Arithmetic subjective and Objective, Published by S.Chand & Co Ltd., Revised Edition, 2017.
2. Rajesh Verma, Fast track Objective arithmetic, Arihant Publications India Limited Fourth Edition, 2018.

### Website and e-Learning Source

1. <https://nptel.ac.in>



## BRIDGE MATHEMATICS

### Objectives of the Course

- To bridge the gap and facilitate transition from higher secondary to tertiary education;
- To instill confidence among stakeholders and inculcate interest for Mathematics;

### UNIT I

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

### UNIT II

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

### UNIT III

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

### UNIT IV

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

### UNIT V

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

### Recommended Text

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

### Website and e-Learning Source

1. <https://nptel.ac.in>

