

TRIGONOMETRY

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
I	21CMA1B	Core II	Hrs/Week	Hrs/Sem	Hrs/week	Hrs/Sem	0	4
			4	60	4	60		

COURSE OBJECTIVES:

The students will be able to

- Apply and establish the concept of trigonometric identities in proving the given statement
- Improve problem solving skills in Trigonometry

COURSE OUTCOMES:

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

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Develop the knowledge about Expansions	K1
CO2	Expand inverse circular functions	K2
CO3	Evaluate circular and hyperbolic functions	K3
CO4	Study the concepts of logarithms of quantities	K3
CO5	Find the expansion of various types of series	K3

Knowledge Level: K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze.

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	M	S	M	S	S
CO2	S	S	S	M	S	S
CO3	S	S	S	M	S	M
CO4	M	M	S	S	M	S
CO5	S	S	M	S	M	S

S- Strong; M- Medium; L- Low

UNIT I: EXPANSIONS**12 Hours**

Expansions of $\cos n\theta$, $\sin n\theta$ - Expansion of $\tan n\theta$ - Expansion of $\tan [A+B+C+\dots]$ – Formation of Equations - Solution of Trigonometric equations.

UNIT II: EXPANSIONS (Contd.)**12 Hours**

$\sin^n \theta$, $\cos^n \theta$ in terms of Functions of multiples of θ - Expansions of $\sin \theta$, $\cos \theta$ and $\tan \theta$ in a series of ascending powers of θ – Expansion of Inverse circular Functions.

UNIT III: HYPERBOLIC FUNCTIONS**12 Hours**

Definition – Relation between circular and Hyperbolic Functions – Inverse Hyperbolic Functions.

UNIT IV: LOGARITHM AND SUMMATION OF SERIES**12 Hours**

Logarithm of complex quantities. Summation of Series using Differences.

UNIT V : SUMMATION OF TRIGONOMETRIC SERIES **12 Hours**

Gregory Series- Euler Series – $C+iS$ method.

DISTRIBUTION OF MARKS: THEORY 20% AND PROBLEMS: 80%**TEXT BOOK**

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	S.Narayanan and T. K. Mancikavachagom Pillay	Trigonometry	S.Viswanathan printers & Publishers Pvt. Ltd. Chennai	2004

REFERENCE BOOKS

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	P. Kandasamy. K.Thilagavathy	Mathematics for B.Sc. Vol- I,II,III & IV	S.Chand & Company Ltd. New Delhi-55.	2004

2.	Duraipandian and Laxmi Duraipandian	Trigonometry	Emerald Publishers, Chennai	1984
3.	B.S. Grewal	Higer Engineering Mathematics	Khanna Publishers, New Delhi.	2002
4.	S.L.Loney	Plane Trigonometry, Part II	Cambridge University Press, London.	1982
5.	A. Singaravelu	Algebra and Trigonometry, Vol- I and II	Meenakshi Agency, Chennai	2003
6.	P.R.Vittal	Trigonometry	MargamPublications, Chennai.	2004

WEB RESOURCES

1. <https://open.umn.edu/opentextbooks/textbooks/algebra-and-trigonometry>
2. <https://www.emathinstruction.com/algebra-2-trigonometry/>

TEACHING METHODOLOGY

1. Class room Teaching
2. Assignments
3. Seminars
4. Discussions
- 5.PPT Presentations

SYLLABUS DESIGNERS

1. Dr. M. Devi, Assistant Professor of Mathematics.
2. Dr. B. Vijayalakshmi, Assistant Professor of Mathematics.