

Course Code	Course Title	C	H	I	E	T
17UIMMC2	Trigonometry and Theory of Equations	4	4	25	75	100

Unit I Trigonometry **12 Hrs**

Hyperbolic function – Relation between hyperbolic function and circular trigonometric functions – Inverse hyperbolic functions.

Unit II Trigonometric series **12 Hrs**

Logarithm of a complex number – Summation of trigonometric series – Difference method – C+iS method – Gregory’s series (Excluding the method angles in arithmetic progression).

Unit III Roots and Coefficients **12 Hrs**

Equations with real coefficients and imaginary roots-equations with rational coefficients and irrational roots- Relation between roots and coefficients – Symmetric functions of the roots – Sum of the power of the roots.

Unit IV Reciprocal equations and Transformations of equations **12 Hrs**

Reciprocal equations –solution of standard reciprocal equation- Solving reciprocal equations by reducing to standard form – Transformation of equations- Roots with signs changed- Roots multiplied by a given number – Increasing and decreasing the roots-Removal of terms- Descartes’s rule of sign- Rolle’s theorem(without proof).

Unit V Cubic and Biquadratic equation **12 Hrs**

Horner’s method– Cardon’s method – Trigonometrical method- Ferrari’s method of solving biquadratic equations.

Text Book(s):

1. T. K. Manicavachagom Pillay, Algebra Vol. I, 2003 Edition, S. Viswanathan (Printers & Publishers) Pvt. Ltd.

Chapters: 6(6.9-6.11, 6.13, 6.15- 6.18, 6.24, 6.25, 6.30, 6.34 &6.35).

2. Dr. S. Arumugam, Trigonometry and Fourier series, 1999 Edition, New Gamma Publishing House.

Chapters: 2, 3, 4.

Reference Books:

1. M. K. Venkatraman, Manorama Sridhar, Classical Algebra & Trigonometry, 1st Edition 2002, The National Publishing Company.
2. T. K. Manicavachagom Pillai, Trigonometry, 1997 Edition, S. Viswanathan (Printers & Publishers) Pvt.Ltd.