24MA802 **Foundations of Indian Mathematics** **4 0 0 4**

This course aims to provide a sound philosophical foundation of Indian Mathematics, with special emphasis on the Kerala Mathematicians. This course can help the researcher to understand the Indian Knowledge system that prevailed and will help to develop and relate modern mathematics to various concepts.

Contributions of Indian Mathematicians

Unit 1:

Special Reference to following Indian Mathematicians:
Aryabhata (476–550 AD), Varahamihira (505–587 AD), Yativṛṣabha (6 C-AD) , Brahmagupta (598–670 AD) , Bhaskara I (600–680 AD) Shridhara (650–850 AD), Mahavira (9 C-AD), Pavuluri Mallana (11 C-AD) , Hemachandra (1087–1172 AD) , Bhaskara II (1114–1185 AD),

Unit 2:

Narayana Pandit (1340–1400 AD), Sangamagrama Madhava (1340- 1425 AD), Parameshvara, (1360–1455 AD), Nilakantha Somayaji, (1444–1545 AD), Raghunatha Siromani, (1475–1550 AD), Mahendra Suri (14 C-AD), Shankara Variyar (c. 1530) , Jyeshtadeva, (1500–1610), Achyuta Pisharati (1550–1621), Srinivasa Ramanujan, Harish Chandra, R.C.Bose, Srikhande, P.C.Mahalanobis.

Unit 3:

Mathematical Thought in Vedic India: Vedic geometry, Numbers in Vedic Literature: The ´Sulbasutra, Jyotisa-vedanga, Number Names in the Rigveda

Unit 4:

The School of Madhava in Kerala, Infinite series and other mathematics, Astronomy and scientific methodology

Reference:

Ancient Indian Mathematics: an overview, S.G. Dani, School of Mathematics, TIFR, Bombay

The Mathematics of India Concepts, Methods, Connections, P. P. Divakaran, Springer.

Mathematics in India - Kim Plofker, Princeton University Press

Evaluation Pattern:

Category	Marks
Continuous Assessment	20
Mid-Term	30
End Semester	50
Total	**100**