Course code	Course Title	L	T	P	C
PHD19003	Chemistry of Natural products	4	0	0	4

Unit 1: Introduction to natural products

Primary and secondary metabolite, sourcing of natural products, venoms and toxins in nature, natural products in food, spices, beverages and folk medicines.

Unit 2: General Natural products pathway and synthesis

Terpenes & Isoprene rule, Shikimate pathway, mevalonate pathway, methylerythritol phosphate pathway, polyketides, acetate pathway.

Unit 3: Chemical categories of natural products

Alkaloids, peptides, proteins and other amino acids derivatives, carbohydrates, fats, lipids nucleic acids & base pairings.

Unit 4: Natural products contribution to human health

Euphorics, anti -invectives from nature, terpenes in human health, carotenoids, selected vitamins and their commercial production.

Unit 5: Approaches towards total synthesis of Natural products

Introduction, total synthesis of aromatic products, selected natural products like reserpine, cholesterol, gilvocarcin-M, methods in natural products & techniques which is used in isolation, structure determination of different types of secondary metabolites.

References:

1. Organic Synthesis: The Disconnection approach, 1st edition, by Stuart warren.
2. Natural Products Chemistry: sources, separation and structures, 1st edition, by Raymond Cooper and George Nicola
3. Medicinal natural products A Biosynthetic approach,3rd edition, by Paul. M. Dewick
4. Natural products isolation, 2nd edition, by Satyajit D. Sarker