

<b>FCYF 906</b>	<b>Chemistry of Natural Products</b>	<b>3-1-0</b>	<b>4 Credits</b>
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***Course objective***

The course provides a brief introduction to plant systematics. Significant poisonous and medicinal plants, together with natural medicines, will be discussed. Important classes of compounds (secondary metabolites) in and from nature will be emphasised, and stress will be put on classification, nomenclature, structure, biosynthesis, occurrence, analysis and pharmaceutical perspectives. Practical exercises demonstrate different techniques within natural product chemistry.

**Module -I**

**[16 Lectures]**

Introduction to natural products: Isolation and structure elucidation of terpenes, alkaloids, flavonoids, xanthenes. Structural elucidation of strychnine, tylophorine, morphine, abietic acid.

**Module -II**

**[12 Lectures]**

Biosynthetic aspects and Synthesis of selected natural products of biological and structural importance: benzyloquinoline alkaloids, colchicines, quinine, terpenes (mono, di and tri), isoflavones, anthraquinones.

**Module -III**

**[14 Lectures]**

Total Synthesis: Taxol, erythronolide B, penicillin V, Prostaglandins F2-alpha and E2.

**Essential Reading:**

1. Classics in Total Synthesis III: Further Targets, Strategies, Methods, K. C. Nicolaou, Jason S. Chen, Wiley-VCH, 1<sup>st</sup> Edn., 2011.
2. The Way Synthesis, T. Hudlicky and J. W. Reed, Wiley-VCH, 1<sup>st</sup> Edn., 2007.
3. The Logic of Chemical Synthesis, E. J. Corey and X-M. Cheng, John-Wiley & Sons, 1<sup>st</sup> Edn., 1989.
4. Comprehensive Natural Products Chemistry, D.H. R. Barton, K. Nakanishi, O. Meth-Cohn, Elsevier, Vols 1-9, 1999.
5. Chemistry of Natural Products, N. R. Krishnamurthy, University Press, 2<sup>nd</sup> Edn., 2010.