

**ORGANIC CHEMISTRY (BS-ADP 8<sup>th</sup> Semester)**

<b>Module Code:</b>	<b>Chem-457</b>
<b>Module title:</b>	<b>Natural Products</b>
<b>Name of Scheme:</b>	<b>BS-ADP 8<sup>th</sup> Semester</b>
<b>Department:</b>	<b>School of Chemistry</b>
<b>Faculty:</b>	<b>Science</b>
<b>Module Type:</b>	<b>Compulsory</b>
<b>Module Rating:</b>	<b>2 Credits</b>

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**OBJECTIVES:**

To develop knowledge about the basic rules and principles for working, instrumentation, sample handling and applications for structural characterization of organic compounds by Mass spectrometry. To gain understanding about the isolation and general methods of structure determination and biosynthesis of different classes of natural products.

**SYLLABUS OUTLINES:**

**1. Mass Spectrometry**

Introduction; types, Isotopic abundance, molecular and metastable ions; modes of fragmentation, applications of mass spectrometry in different classes of organic chemistry, interpretation of mass spectra of small organic molecules.

**2. Natural Products**

Introduction, classification, isolation and general methods of structure determination of alkaloids, terpenes, (triterpenoids and steroids), biosynthesis of alkaloids, steroids & terpenoids and their stereochemistry.

**RECOMMENDED BOOKS:**

1. Organic Spectroscopy and Chromatography, by M. Younas. Ilmi kitab khana, kabir street, urdu bazar, Lahore.
2. Organic Chemistry, (4<sup>th</sup> - 7<sup>th</sup> Ed) by Paula Yurkanis Bruice, Pearson Education (Singapore) Pvt. Ltd. 2004-2015.
3. Introduction to Spectroscopy by Donald L. Pavia, Gary M. Lampman, George S. Kriz, (2<sup>nd</sup> – 5<sup>th</sup> Ed). Saunders Golden Sunburst Series, 1996-2018.
4. Organic Chemistry, Vol. I (6<sup>th</sup> Ed.) and II (5<sup>th</sup> Ed.) by I.L. Finar, Pearson Education (Singapore) Pvt. Ltd. 2008.
5. Organic Chemistry, (6<sup>th</sup> Ed.) by Francis A. Carey, McGraw Hill, USA, 2005.
6. Organic Chemistry, by Jonathan Clayden, Nick Greeves and Stuart Warren, Oxford University Press, 2000.
7. Chemistry for Pharmacy Students by Satyajit D Sarkar, Lutfun Nahan. John Wiley & Sons, Ltd 2007.
8. Natural Product Chemistry at a Glance by Stephen P. Stanforth. Blackwel Publishing ltd, 9600 Garsuington Road, Oxford OX4 2DQ, UK.