

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

<b>Module Code:</b>	<b>Chem-478</b>
<b>Module Title:</b>	<b>Lipids</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**

After studying this course student will be able to understand lipids, classification and importance of lipids, significance of lipids in biological membranes, triglyceride metabolism, phospholipids metabolism, cholesterol metabolism and lipid transport in plasma.

**SYLLABUS OUTLINES**

Nature, structure and classification of lipids. Structure and chemical properties of triglycerides, phospholipids, glycolipids, sphingolipids and steroids. Lipids with specific biological activities. Acid value, Saponification value and Iodine value of lipids/fats. Properties of lipid aggregates: Micelles and Bilayers. Structure and function of prostaglandins. Structure and assembly of Biological membranes and membrane proteins. Fluid Mosaic model. The erythrocyte membrane. Digestion and absorption of Lipids. Detailed Synthesis and Oxidation of fatty acids. Involving of Acyl carrier protein and Carnitine carriers. Metabolism of essential fatty acids and their metabolic disorders. Control of fatty acid Metabolism. Ketone Bodies.

**RECOMMENDED BOOKS**

1. Principles of Biochemistry by Lehninger AL, Nelson DL and CoxMN,2000  
Pub: worth Publishers
2. Biochemistry by Lubert Stryer(2006) Pub: Freeman andCompany
3. A biologist's guide to Principles and Techniques of Practical Biochemistry by Bryan L Williams and Keith Wilson Pub: Edward Arnold Ltd.
4. Immunology by J. Kuby 2nd ed. 1996 Pub: W. H. freeman and Co.
5. Harpers Biochemistry, 27th ed. (2006) McGraw Hill Inc.
6. Lippincott's Biochemistry by champ c; Harvey.R.A and Ferrie. D .R. 3<sup>rd</sup> edition., Pub: J. B. Lippincott company