

**Department of Applied Chemistry**  
**Course completion unit plan**  
**CH 91207: NATURAL PRODUCTS**

Lecture No.	Date	Topic to be taught	Reference/ Remark
<b>Unit 1 : Water soluble vitamins</b>			
1		Introduction to water soluble vitamins	Finar I. L. Organic Chemistry
2		Vitamin B-Complex occurrence and properties	-
3		Vitamin B-Complex biological applications	
4		Structure and properties of Thiamine, riboflavin	-
5		Biological applications Thiamine, riboflavin	
6		Structure and properties of Pyridoxine, niacin, pantothenic acid	-
7		Structure and properties of Folic acid, inositol	
8		B12, biotins, vitamin-C uses and applications	-
<b>Unit 2 : Fat-soluble vitamins</b>			Dewick P.M., Medicinal natural products
9		Introduction to Fat-soluble vitamins	-
10		Structure and properties of Vitamin - A	-
11		Occurrence and properties of Vitamin - D	-
12		Biological applications of Vitamin A and D	
13		Occurrence and properties of Vitamin - E	-
14		Structure and properties of Vitamin - K	-
15		Biological applications of Vitamin E and K	
16		Applications of vitamins	-
<b>Unit 3 : (a) Carbohydrates</b>			
17		Structure determination of glucose, fructose	Thisbe K. Lindhorst, Essentials of Carbohydrate Chemistry & Biochemistry
18		Anomeric effect	
19		Structures of disaccharides	
20		Sucrose, cellulose and starch	-
<b>(b) Glycosides</b>			Li J.J., Corey E.J., Total Synthesis of Natural Products
21		Cardiac glycosides	-
<b>(c) Lipids</b>			
22		Constitution of simple and compound lipids and waxes	-
23		Properties of simple and compound lipids and waxes	-
24		Uses of simple and compound lipids and waxes	-
<b>Unit 4 : Terpenoids</b>			

25		Introduction of Terpenoid compounds	<b>Agrawal O.P. Chemistry of natural products</b>
26		Isoprene & special isoprene rule	-
27		Composition and properties of common essential oils	-
27		Applications of common essential oils	
29		Citral, citronellol, geraniol, linalool, limonene, terpineol	-
30		Carvone, thymol, menthol, pinene, camphene	-
31		Properties of menthol, pinene, camphene	
32		Camphor, farnesols, zingiberene and bisabolene	-
<b>Unit 5: (a) Carotenoids</b>			
33		Introduction to Carotenoids	<b>Agrawal O.P. Chemistry of natural products</b>
34		Structure and properties of Carotene, alpha -carotene	-
35		Applications of Carotene, alpha -carotene	
36		Structure and properties of Beta-carotene, lycopene	-
37		Applications of Beta-carotene, lycopene	
<b>(b) Porphyrins</b>			<b>Agrawal O.P. Chemistry of natural products</b>
38		Introduction to Porphyrins	-
39		Porphin derivatives, their stability and synthesis	-
40		Constitution of haemin, biological significance of haemin	-