**BCH 440 (Metabolism II)**

1. To study the metabolism of triacylglycerol, cholesterol, lipoproteins, Eicosanoids, and prostaglandins
2. To study the metabolism of amino acids and related compounds
3. To study how metabolic processes are integrated

**Credit hours:** 3 (3+0)
**Pre-requisite**: BCH 340

**Main Objective**

To gain knowledge into the metabolism of lipids, proteins and metabolic integration.

**Learning Outcomes**

1- Describe the metabolism of triacylglycerol, cholesterol, lipoproteins, eicosanoids, and prostaglandins with clinical significance.

2- Explain the metabolism of amino acids and related compounds with clinical significance.

3- Distinguish the metabolic pathways of lipid and protein metabolism in health and diseases.

4- Demonstrate the interrelationship of various metabolic pathways.

## Course Content

| Course Outline | |
|---|---|
| **Topics Covered** | **Planned Contact Hours** |
| **Lipoprotein metabolism** | 6 |
| **Cholesterol metabolism** | 3 |
| **Prostaglandins** | 3 |
| **Digestion and absorption of proteins and amino acids in the GI tract.** | 3 |
| **Catabolism of amino acid nitrogen & Urea Cycle** | 2 |
| **Nitrogen balance** | 2 |
| **Catabolism of carbon skeleton of amino acids** | 5 |
| **Biosynthesis of amino acids** | 5 |
| **Conversion of amino acids to specialized products** | 3 |

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| **Chemistry and biosynthesis of porhyrins**<br>**Catabolism of Haem** | 4 |
| **Integration of metabolism** | 6 |

## Students Assessment Activities

**Exam I 25% of the Final Grade - 1hour duration-**

**Exam II 25% of the Final Grade -1hour duration**

**Activities 10% of the Final Grade**

**Exam III (Final Exam) 40% of the Final Grade- 3 hours' duration**

**References**

Lippincot's Illustrated Reviews Biochemistry

Lechninger's Principles of Biochemistry 4th edition. D. L. Nelson and M.M. Cox, Worth Publishers.

Harpers illustrated biochemistry 25th edition. Robert K. Murray; Darly K. Granner: Victor W Rodwell