**Course Description**

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| **Course Title** | | | Nutritional Biochemistry | **Course Code** | | **BND231** |
| **Program** | | | Therapeutic Nutrition and Dietetic | **Level** | | 2nd level |
| **Credit Hours** | | | 3 | **Pre-requisites** | | **BND121** |
| **Course Description:** | | | | | | |
| This course provides clinical nutrition students with basic knowledge about metabolic pathways and their key steps and regulation points. It helps students understand the generation and storage of metabolic energy. This course also acquaints clinical nutrition students with some basic biochemical lab techniques to help them perform some independent lab work and learn to cooperate with their colleagues in a laboratory environment. In the laboratory sessions, students are expected to learn how to use the centrifuge and spectrophotometer. This course is based on lectures, lab sessions, seminars, and group discussions. Introduction to Biochemistry course is a prerequisite course. | | | | | | |
| **Topics Covered:** | | | | | | |
|  | Metabolism of carbohydrate | | | | | |
|  | Mid exam | | | | | |
|  | Metabolism of Lipids | | | | | |
|  | Amino acid metabolism and tumor markers | | | | | |
|  | Nucleic acid metabolism | | | | | |
|  | Clinical Chemistry | | | | | |
|  | Final exam | | | | | |
| **Course Learning Outcomes:** | | | | | | |
| After completing this course, students would be able to: | | | | | | |
|  | Mention the function (medical importance) of metabolic pathways. | | | | | |
|  | Illustrate the steps and regulatory mechanisms of the metabolic pathways. | | | | | |
|  | Point out the related metabolic disorders and their clinical prints on biochemical and molecular basis. | | | | | |
|  | Analyze the clinical significance of determination of plasma levels of glucose, total proteins, albumin, cholesterol, creatinine, and uric acid and some enzymes. | | | | | |
|  | Estimate serum levels of glucose, total proteins, albumin, cholesterol, creatinine, and uric acid by colorimetric methods. | | | | | |
|  | Calculate the bioenergetics of the concerned metabolic pathways under different physiological circumstances. | | | | | |
|  | Work effectively in a group in lab or during preparation of seminars. | | | | | |
| **Textbooks:** | | | | | | |
|  | Rodwell V., Bender D., Botham K. (Author), Kennelly P., Anthony W. (2015), Harper's Illustrated Biochemistry, 30th edition, McGraw-Hill Education, USA. | | | | | |
|  | Charlotte W.P. and Kathleen C. (2014), Essential Biochemistry, 3rd edition, John Wiley and Sons, Inc., USA. | | | | | |
| **Course Assessment:** | | | | | | |
| **No.** | | **Assessment Tasks** | | | **Mark** | |
|  | | Assignment and reports | | | 10 | |
|  | | Midterm Exam | | | 20 | |
|  | | Practical exam | | | 20 | |
|  | | Final exam | | | 50 | |
| **Total** | | | | | **100** | |