

# TEMPLATE FOR COURSE SPECIFICATION

**University:** Khyber Medical University

**Faculty:** Muhammad Jaseem Khan / Shaikh Atif Mehmood

## **Course Specification**

Programme(s) on which the course is given: **BS Paramedics**  
Major or minor element of the programmes: **Major**  
Department offering the programme: **Institute of Paramedical Sciences**  
Department offering the course: **Institute of Paramedical Sciences**  
Academic year/Level: **Spring Semester, 2013**  
Date of specification approval:

### **A. Basic information**

Title: Biochemistry-II Code:  
Credit Hours: 3+1 Lectures: 54  
Practical: 36 Total: 90

### **B. Professional Information**

#### **1. Overall aims of course**

- i. To understand the chemical composition of macro and micro molecules of the cell
- ii. To understand different biochemical reactions in cell
- iii. To utilize their knowledge scientifically

#### **2. Intended learning outcomes of course (ILOs)**

- a. Knowledge and understanding:
  - i. Basic concepts of cell
  - ii. Basic concepts of Carbohydrates, proteins, lipids, vitamins, enzymes, hormones and minerals.
  - iii. Biochemical processes of absorption and digestion

- b. Intellectual skills
  - i. Communication skills
  - ii. Expression skills
  - iii. Teaching skills
  
- c. Professional and Practical Skills
  - i. Analyze different biochemical parameters
  - ii. Trouble shoot common problems in chemistry analyzer
  - iii. Prepare solutions of different concentrations
  
- d. General and transferable skills
  - i. Diagnosis skills
  - ii. Good laboratory practices
  - iii. Scientific base approach

### 3. Contents:

Topic	No. of Hours	Lecture	Practical
Balance food	3	3	0
Major food groups	3	3	0
Metabolic changes in starvation	1	1	0
Protein energy malnutrition	1	1	0
Regulation of food intake	1	1	0
Obesity	1	1	0
Bioenergetics: The Role of ATP	1	1	0
The Respiratory Chain & Oxidative Phosphorylation	6	2	4
Carbohydrates of Physiologic Significance	5	1	4
The Citric Acid Cycle: The Catabolism of Acetyl-CoA	2	2	0
Glycolysis & the Oxidation of Pyruvate	3	3	0
Metabolism of Glycogen	3	3	0
Gluconeogenesis & Control of the Blood Glucose acids and lipids	3	3	0
The Pentose Phosphate Pathway & Other	2	2	0

Pathways of Hexose Metabolism			
Oxidation of Fatty Acids: Ketogenesis	2	2	0
Metabolism of Unsaturated Fatty Acids & Eicosanoids	2	2	0
Metabolism of Acylglycerols & Sphingolipids	2	2	0
Integration of Metabolism—the Provision of Metabolic Fuels	2	2	0
Metabolism of Purine & Pyrimidine Nucleotides	6	2	4
Catabolism of Proteins & of Amino Acid Nitrogen	2	2	0
Conversion of Amino Acids to Specialized Products	4	2	2
Porphyryns & Bile Pigments	4	2	2
Enzymes: Mechanism of Action	6	2	4
Enzymes: Kinetics	2	2	0
Enzymes: Regulation of Activities	6	2	4
Body Fluids:Urine, Feaces, CSF,Pleural and pericardial fluids,Peritoneal fluid,Synovial fluid,Semen analysis	17	5	12

#### 4. Teaching and Learning Methods:

- a. Lectures (PPT/PDF)
- b. Presentations/Quizzes
- c. Assignments
- d. Practicals

#### 5. Student Assessment Methods

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|--------------------|--|
| a. Presentations   | to access student communication skills.            |
| b. Assignments     | to access student writing and intellectual skills. |
| c. Mid-term exam   | to access student knowledge and understanding.     |
| d. Final term exam | to access learning outcomes.                       |

## Assessment Schedule

Assessment 1	Class test	Week	2 <sup>nd</sup>
Assessment 2	Assignment	Week	5 <sup>th</sup>
Assessment 3	Class test	Week	8 <sup>th</sup>
Assessment 4	Mid-term	Week	9 <sup>th</sup>
Assessment 5	Assignment	Week	11 <sup>th</sup>
Assessment 6	Class test	Week	14 <sup>th</sup>
Assessment 7	Final term	Week	20 <sup>th</sup>

## Weighting of assessments

Mid-term examination	30 %
Final-term examination	50 %
Class test/Assignment/Presentation	20 %
Total	100 %

## 6. Lists of references

- a. Course notes: Class lectures (PPT)
- b. Essential books (text books)
  - i. Essentials of Medical Biochemistry Vol. I and II  
By Mushtaq Ahmad
  - ii. Instant Biochemistry By Faiq Ahmed
- c. Recommended books
  - i. Harpers Illustrated Biochemistry
  - ii. Biochemistry By Lubert Stryer
  - iii. Lehninger- Principles of Biochemistry

## 7. Facilities required for teaching and learning

- I. Multimedia
- II. Text Books
- III. Recommended Books
- IV. Lab. Reagents

**Course coordinator:**  
**Date: 13/11/2012**

**Consultant**