ATTACHMENT 5.

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

T6. Course Specifications (CS)

Biochemistry and Nutrition (BAN 231)

Course Specifications

Institution **Alfarabi Private Colleges**	Date of Report **4/9/2016**
College/Department **Medicine College/ Basic Medical Sciences Department**	

A. Course Identification and General Information

1. Course title and code: **Biochemistry and Nutrition (BAN 231)**
2. Credit hours: **4 Credit hours (3 theoretical hour and 1 practical and seminar hour)**
3. Program(s) in which the course is offered. **Medicine Program** (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: **Dr. Eman Saqr**
5. Level/year at which this course is offered: **Level 3/2nd year – First Semester 2016-2017**
6. Pre-requisites for this course (if any): **Introduction to chemistry (101 CHEM)**
7. Co-requisites for this course (if any): **None**
8. Location if not on main campus: **None**
9. Mode of Instruction (mark all that apply)

a. traditional classroom	■	What percentage?	
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course? **This course introduces the students to basic concepts of biochemistry covering the structural and functional characteristics of the basic nutrients, enzymes and hormones. It also deals of issues related to nutrition and basic metabolism.**
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) **Changes in content as a result of new research in the field.**

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: **This course designed to give the medical students basic cognitive knowledge of the:** • **Basic concepts of biochemistry covering on structural and functional characteristics of the basic nutrients, enzymes and hormones.** • **Issues related to nutrition and basic metabolism.** • **Structure and properties of bio-molecules, such as amino acids, protein, carbohydrates, lipids and nucleic acids.** • **Relationship between protein structure and its biological function, generation and storage of metabolic energy, main metabolic pathways and their key steps.** • **Role of phospholipids in determining the properties of biological membranes and their function.**

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
Introduction to the course The role of clinical biochemistry in medicine	**1**	**1**

Amino acid chemistry		**1**
Protein structure and function		**1**
Amino acid catabolism and urea cycle	**1**	**1**
Metabolic defect in amino acid metabolism		**1**
Catalytic protein- enzyme		**1**
Enzyme in clinical diagnosis	**1**	**1**
Transport protein- Hemoglobin anabolism		**1**
Hemoglobin catabolism		**1**
Structural protein- Collagen synthesis	**1**	**1**
Purine metabolism		**1**
Pyrimidine metabolism		**1**
Carbohydrate chemistry	**1**	**1**
Glycolysis		**1**
Tricarboxylic acid cycle		**1**
Metabolism and bioenergetics	**1**	**1**
Glycogen metabolism		**1**
Gluconeogenesis		**1**
Pentose phosphate pathway	**1**	**1**
Lipid chemistry		**1**
Biochemistry of triglyceride		**1**
Fatty acid oxidation and synthesis	**1**	**1**
Ketone bodies metabolism		**1**
Complex lipid metabolism		**1**
Prostaglandin and related compounds	**1**	**1**
Cholesterol and lipoproteins		**1**
Steroid hormones		**1**

Integration of metabolism: Metabolic Effects of Insulin and Glucagon	**1**	**1**
Principles of nutrition 1		**1**
Principle of nutrition 2		**1**
Water soluble vitamins	**1**	**1**
Fat soluble vitamins 1		**1**
Fat soluble vitamins 2		**1**
Metabolism of Calcium and Phosphorus	**1**	**1**
Iron Metabolism		
Revision		

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Seminar	Total
Contact Hours	**36**	**-**	**12**	**-**	**12**	**60**
Credit	**3**	**-**	**0.5**	**-**	**0.5**	**4**

3. Additional private study/learning hours expected for students per week. **2 hours/week**

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Describe types and dietary sources of Proteins, carbohydrates, lipids, their digestion and absorption.	• Lecture • Small group discussion • Assignments	• MCQs • Seminars
1.2	Describe and explain the major metabolic pathways of proteins, carbohydrates and lipids.		
1.3	Describe the most important metabolic defect in nutrient metabolism		
1.4	Describe the process involved in nucleotide synthesis and degradation and protein synthesis		
1.5	Understand the integration of nutrients metabolism. Discuss the role of enzymes in clinical diagnosis.		
1.6	Understand major concepts of nutrition, vitamins functionand disorder and minerals metabolism		
2.0	**Cognitive Skills**		
2.1	Explain the synthesis and degradation of different nutrients in the living cell.	• Lecture • Small group discussion • Assignments	• MCQs • Seminars
2.2	Explain the basic principles of nutrition. Summarize the main functions of the different types of vitamins and minerals.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Search relevant literature materials in the textbooks and electronic sources.	• Active small-group. • Encouraging students to express their own ideas. • Demonstrating effective listening skills. • Developing critical skills, observation, and feedback.	• Open discussion. • Small-group observation
3.2	A cooperative and open atmosphere is expected during all class meetings. Students are encouraged to work together and to study together.		
3.3	Handle instruments and laboratory equipment with care and professionalism.		
4.0	**Communication, Information Technology, Numerical**		
4.1	Demonstrate an ability to communicate with all members of the clinical team & peers in an appropriate manner, which inspires confidence, motivation, and teamwork.	• Demonstration, and chair side discussion • Role model • Supervised practice and feedback	• Assignments
4.2	Use information and communication technology to complete assigned tasks.	• Assignments	• Assignments
5.0	**Psychomotor**		
5.1	Estimate quantitatively serum glucose, albumin, total protein, urea, creatinine, cholesterol, triglyceride, bilirubin, calcium and phosphorus.	Practical sessions	

5.2	Measure amylase, alkaline phosphatase and aspartate transaminase in serum	Practical Sessions	

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	**Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)**								
	1.1	**1.2**		**2.1**		**3.2**		**4.1**	
1.1									
2.1									

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	**Mid-Term Exam**	7-8th	20%
2	**Assessment task (Seminar)**	during the semester	10%
3	**Quizzes (Sum of the two quizzes)**	5th and 13th	10%
4	**Practical Exam**	16th	20%
5	**Final Exam**	18th – 19th	40%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- **All the staff members are available and reachable in their office and in the laboratory sessions.**
- **The office hours is 2 hours /week, this is divided in to two sessions.**
- **The email is available for students to communicate with the course director.**

E Learning Resources

1. List Required Textbooks a. **Champe, P. C., Harvey, R. A. and Ferrier, D. R., 2005. Biochemistry "Lippincott's Illustrated Reviews", 3rd Edition.** b. **Shivananda Nayak B, (2013). Essentials of Biochemistry for Medical Students.** c. **Baynes, Medical Biochemistry, Mosby, London.**
2. List Essential References Materials (Journals, Reports, etc.) • **Robert K. Murray, Daryl K. granner, Victor W. Rodwell. Harper's Biochemistry, 25th Edition.**
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) **a. Thomas M. Devlin, *Textbook of Biochemistry with Clinical Correlations*, Jon Willey & sons, New York.** **b. LubertStryer, *Biochemistry*, W.H. Freeman and Company, San Francisco.** **c. Pamela C. Champe, *Biochemistry*, Lippincott Raven.**
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. • **None**
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. • **None**

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) • **Lecture rooms and Biochemistry Laboratory**
2. Computing resources (AV, data show, Smart Board, software, etc.) • **Data show**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

• **Basic biochemical instruments as spectrophotometer, centrifuge, water bath, water distiller, pH meter, etc., all chemicals and glass wares used in biochemical practical experiments.**

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • **Students' survey that is conducted by the College Quality Unit.**
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • **Peer review but it is not established yet.**
3 Processes for Improvement of Teaching • **Orientation sessions for newly attached staff members by a senior faculty member.**
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • **None**
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • **Course report reflects on both the course outcome in term of students' performance, and the process in term of the difficulties that faced the course implementation.** • **Plans are put for improvement considering students' survey and their opinions in the feedback sessions.**

Name of Instructor: **Dr. Eman Saqr**

Signature: _____ Date Report Completed: **4/9/2016**

Name of Field Experience Teaching Staff: **Biochemistry**

Program Coordinator:_____

Signature: _____ Date Received: _____