

Course Description Template for Clinical Chemistry Fifth Year First Semester (Theoretical)

Higher Education Institution Performance Review ((Academic Program Review))

Course Description

This course description provides a summary of the main characteristics of the course and the learning outcomes expected of the student, demonstrating whether he has made the most of the learning opportunities available and must be linked to the program description

1. Educational Institution	Ministry of Higher Education and Scientific Research / Al-Zahrawi University
2. University Department / Center	College of Pharmacy
3. Course Name / Code	Clinical Chemistry Theoretical / PCLS510
4. Programs in which it is included	Bachelor of Pharmacy
5. Available Forms of Attendance	Daily attendance-
6. Semester / Year	First Semester / Fifth year
7. Total Number of Study Hours	3 hours per week
8. Date of preparing this description	2025-2026
9. Course Objectives:	In addition to introducing the student to more advanced topics in clinical chemistry, this course will provide the student with the clinical and practical skills and knowledge necessary to perform and interpret clinical laboratory tests in the clinical chemistry laboratory departments. These topics include evaluation of liver function, kidney function, some ion metabolism processes, evaluation of acid-base disorders, clinical endocrinology, and other important topics in clinical chemistry.
10- Learning Outcomes, Teaching and Learning Methods, and Evaluation	

A. Knowledge and Understanding

- 1- Lectures.
- 2- External resources via Classroom
- 3- Seminars.
- 4- Homework.
- 5- Tests.

B. Subject-Specific Skills

- 1- Enabling students to identify the contents of the laboratory, including tools and glassware, and how to use them.
- 2- Enabling students to deal with laboratory equipment, enable them to operate it, and benefit from its results.
- 3- Enabling students to obtain and understand weight and volume measuring tools.
- 4- Enabling students to learn how to obtain biological samples and how to deal with them.
- 5- Enabling students to understand and deduce results and how to deal with units for each result.

Teaching and Learning Methods

1. Theoretical lectures
2. Laboratory experiments
3. Seminars and reports
4. Posters and class activities

C. Evaluation Methods

1. Oral and written exams
2. Laboratory reports
3. Class activities (posters)

D. Thinking Skills

1. Using modern methods in preparing lectures and presenting them in PowerPoint format
2. Preparing homework on topics related to the scientific material.
3. Showing educational videos on the given material and using visual education.

Teaching and Learning Methods

1. Teaching and lecturing
2. Seminars and homework
3. Tests
4. Field visits

5. Educational posters

Evaluation Methods

Grades, research and reports, tests.

e. General and Transferable Skills

- 1. The student is able to employ the knowledge he has received.**
- 2. Granting confidence to the student through seminar discussions.**
- 3. The student is able to embody what he has acquired in professional development.**

11. Course Structure

Weeks	Hours	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluation Method
1	2	Disorders of carbohydrate metabolism, hyperglycemia and diabetes, hypoglycemia Basic diagnostic test Oral glucose tolerance test	Glucose Disorders	Whiteboard and PowerPoint Presentations	Daily Examination and Oral Questions Discussion
2	2	Lipid metabolism disorders Triglycerides Total cholesterol HDL-c Challenge	Lipid Metabolism	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
3	2	Kidney function tests. Blood urea determination Creatinine determination	Kidney Functions	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
4	2	Liver Function Tests Blood Bilirubin ALT Estimation AST Estimation	Liver Functions	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
5	2	Functions of enzymes Diagnostic enzymes Alkaline phosphatase determination CK estimation	Functions of enzymes	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
6	2	Diseases of the hypothalamus and pituitary glands, disorders of anterior pituitary hormones, disorders of the adrenal gland, hypopituitarism	Endocrine glands	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
7	2	Diseases of the hypothalamus and pituitary endocrine glands, disorders of anterior pituitary hormones, disorders of the adrenal gland, hypopituitarism	Endocrine glands	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
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9	2	Reproductive system, disorders of male and female reproductive function, biochemical evaluation during pregnancy	Endocrinology	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
10	2	Reproductive system, disorders of male and female gonadal function, biochemical evaluation during pregnancy	Endocrinology	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
11	2	Tumor markers	Malignant Tumors	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
12	2	Drug interaction with laboratory tests	Drug effect on tests.	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
13	2	calcium metabolism disorders	The role of calcium	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
14	2	Blood acidity,	Acid-base disorders	Whiteboard and PowerPoint Presentations	Daily Exam, Oral Questions, Discussion, And homework
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12. Infrastructure	
Required Readings:	References: 1- Clinical Chemistry and Metabolic Medicine, Crook, 8th Edition, 2013. 2- Clinical Chemistry, Kaplan, 5th Edition, 2009
Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites:
Social Services (Guest Lectures, Professional Training, Field Studies, Others)	Organizing workshops and courses for graduates:

13. Admission:	
Prerequisites	Admission according to the central plan
Minimum Number of Students	/
Maximum Number of Students	Admission exceeds the capacity plan

Name of the Instructor:

Dr. Azher A. Ibrahim

PhD. Clinical Chemistry