First Year - Course Description 2025-2026

1. Course Name	
Human Anatomy and Histology	
2. Course Code	
101 ACIHAH	
3. Semester/Year	
First Semester / First Stage	
4. Date this description was prepared	
9-2025	
5. Available Forms of Attendance	
In campus	
6. Number of Hours (Total) / Number of Credits (Total)	
3 Theoretical Hours + 2 Practical Hours (75 Hours Total) / 4 Credits	
7. Course administrator name (if more than one name mentioned)	
Theoretical: Name: Lecturer Dr. Zainab Adi / Email: zainab_uday@bcms.edu.iq Practical: Name: Lecturer Zahra Yahya / Email: zahraayahya@bcms.edu.iq	
8. Course Objectives	
Course Objectives	1. Learn the names and functions of anatomical structures. 2. Provide a thorough understanding of how abnormal anatomy affects the onset of diseases. 3. Gain a basic background in histology and understand the properties of cells and their interactions with each other as part of tissues and organs. 4. The ability to describe the normal structure and function of different types of cells, tissues, and organs, and to distinguish their tissue structures through microscopy.
9. Teaching and Learning Strategies	
Strategy	• Presentation and Presentation • Interactive Discussions • Brainstorming • Research and Induction
10. Course Structure	

First Year - Course Description 2025-2026

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	3	General anatomy: anatomical sites, body areas, body cavities. Introduction to Histology: Definition, Basic Concepts of the Cell, Tissue, Organ, System.	General Anatomy Definition of Tissue	Lectures, Discussions, and Reports	Theoretical exam and classroom activities
2	3	- Epithelial tissue, connective tissue, muscle tissue, nerve tissue Practical: Identify the microstructure of epithelial, connective, muscular and neurological tissues.	Overview of the four main types of tissue	=	=
3	3	Describe the tissues of the musculoskeletal system (musculoskeletal system). Anatomically describes the skeleton, skeletal muscles, ligaments, tendons, joints, cartilage, and other connective tissues. Practical: Identify the microstructure of skeletal muscles, ligaments, tendons, joints, and cartilage.	Musculoskeletal system (-bones and joints):	=	=
4	3	A description of the tissues and anatomy of the cardiovascular system. A description of the tissues and function of the different layers of the heart. Description of the heart valve and delivery system. Outline the different microscopic features of the arteries and veins. Identify the differences between the different types of arteries and veins.	Circulation system (cardiovascular system): anatomy and histology	=	=

		Practical: Recognition of heart tissue and histological difference between veins and arteries in microscopic samples.			
5	3	Outline the different cell types present in the blood and describe their morphological characteristics. Mentioning the different stages of blood formation in the bone marrow. Describe the histological features of erythrocytes, white blood cells, and platelets. Practical: Recognition of the microstructure of erythrocytes, white blood cells, and platelets in the blood film and bone marrow Describe the main histological features and general function of the lymphatic system (central and peripheral organs). Describe the tissues of the spleen, lymph node and thymus. Practical: Identify the microstructure of the spleen, lymph node, and thymus.	The circulatory system (lymphatic system) and blood.		
6	3	Description of the tissues and anatomy of the oral cavity, pharynx, esophagus, stomach Practical: Describe the cellular structure of the tissues and anatomy of the oral cavity, pharynx, esophagus, stomach	Gastrointestinal tract (Part 1 – Upper gut):		
7	3	Explanation of the tissues and anatomy of the small intestine, large intestine, rectum, anus. Salivary glands, pancreas, liver, gallbladder. Practical: Describe the cellular structure of the tissue and anatomy of the small intestine, large intestine, rectum, anus. Salivary glands, pancreas, liver, gallbladder.	Gastrointestinal System (Part 2 - Lower Gastrointestinal and		

			Accessory Organs)		
8	3	Describe the main histological features and general function of the nervous system (central and peripheral nervous system). Describe the tissues of the brain, cerebellum, and spinal cord. Describe nerve tissue and nerve ganglia. Outline the main differences between neurons and glial cells. Practical: Identify the microstructure of the brain, cerebellum, spinal cord, nerves, and ganglia.	Nervous system		
9	3	Describe the tissues and anatomy of the conductive part of the respiratory tract (nasal cavity, pharynx, larynx, trachea, bronchi). Discuss the tissues of the respiratory part of the system (bronchiole, bronchiole, and alveoli). Practical: Distinguish between trachea, bronchi, and bronchioles in microscopic specimens	Respiratory System	=	=
10	3	Describe the main histological features and general function of the urinary system. Description of the tissues and function of the kidneys, ureters, urinary bladder, and urethra Describe the main textile components and properties of nephrons. Describe the main tissue components and functions of the periglomerular organ. Practical: Identify the microstructure of the kidneys, ureters, and urinary bladder.	Urinary System		

11	3	Anatomy: Skin layers (epidermis, dermis, subcutaneous). Histology: detailed histology of thick and thin skin, epidermal layers, accessory structures (hair follicles, sebaceous glands, sweat glands).	Integumentary System (The Skin):		
12-13	6	Describe the main histological features of the pituitary, hypothalamus, and pineal gland. Outline the three classes of hormones secreted by the endocrine system. Describe the general mechanism of regulating hormone secretion. Practical: differentiation between pituitary cells, thyroid cells, and parathyroid glands.	Endocrine System	=	=
14-15	6	Describe the tissue of the ovary, ovarian canal, uterus, and the histological change during the menstrual cycle. Describe testicular tissue, conductive ducts, and associated glands.	Reproductive System	=	=

11. Course Evaluation

Midterm Exam 15 marks

Practical Side 20 Marks

Class Events 5 Marks

Final exam 60 marks

12. Learning and Teaching Resources

Required Textbooks (Methodology) if available	1) Anatomy and Physiology for Healthcare by Paul Marshall; Beverly Gallacher; Jim Jolly; Shupikai Rinomhota 2) Atlas of Human Anatomy by Frank H. Netter
Main Reference(s)	1) Histology: A Text and Atlas with correlated cell and molecular biology, 7th ed by Wojciech P.M.H Ross. 2) Wheaters functional histology: a text and color atlas 6th ed. BY Yung , Barbara

Recommended books and references (scientific journals, reports...)	
References, Websites	

First Year - Course Description 2025-2026

1. Course Name:
Analytical Chemistry (Theoretical+ Practical)
2. Course Code:
102 ChPAc
3. Semester / Year:
1st Semester/1st year
4. Description Preparation Date:
9-2025
5. Available Attendance Forms:
On campus
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours Theoretical + 2 hours Practical (75) /4 units
7. Course administrator's name (mention all, if more than one name)
Theory: Name: Assistant lecturer Hasan Fadhil Email: hasan.fadhil@bcms.edu.iq Practical: Name: Assistant lecturer Omar Auday Yousif Email: omar_auday_yousif@bcms.edu.iq
8. Course Objectives

Course Objectives	- Providing students with scientific experience of analytical chemistry with various methods of neutralization reactions. - Study the effect of acidity on various reactions of simple and complex compounds. - The mechanism of qualitative analysis and its importance in various fields of life, including pharmaceutical applications. - Detection of compounds by a number of methods using sedimentation titration, complex formation titration, and oxidation-reduction titration.

9. Teaching and Learning Strategies

Strategy	1. Theoretical lectures covering all aspects of each method 2. Conduct reports on the applications of the methods mentioned above on chemical compounds and pharmaceutical preparations 3. Showing applied videos to help understand the material 4. Use methodological and supporting books 5. Holding scientific sessions in the form of discussions or seminars

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Strong and weak electrolytes. Weight and focus are important devices	Review the important basic concept of analytical chemistry	lecture	Oral exam and discussions
2-5	12	Statistical analysis of data. Reject sedimentary and gravimetric data and methods	Evaluation of gravimetric analysis methods	lecture	Oral exam and discussions
6	3	Organic and inorganic sediments	Scope of applications gravimetric analysis	lecture	Oral exam and discussions
7	3	Organic and inorganic sediments	Scope of applications gravimetric analysis	lecture	Oral exam and discussions
7-8	6	Volumetric methods: acid base neutrality calculations, and acid exponent calculation	Introduction to volumetric analysis methods	lecture	Oral exam and discussions
9	3	Chemical neutralization reactions	Dielectric solutions	lecture	Oral exam and discussions

10-11	6	Details of precipitation methods	Complex system neutralization Theory	lecture	Oral exam and discussions
12	3	Volumetric methods for complex systems	Calculate the pH in a complex system	lecture	Oral exam and discussions
13-14	6	Oxidation and reduction reactions	Equilibrium in the redox system	lecture	Oral exam and discussions
15	3	Various spectroscopic methods: enumerating their types and devices	Spectroscopic analysis	lecture	Oral exam and discussions

11. Course Evaluation

- 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)
- 20 M practical assessment (attendance + quiz + practice+ oral-based exam)
- 60 M paper-based theoretical final exam

_____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamentals of Analytical Chemistry by Skoog and West
Main references (sources)	Fundamentals of Analytical Chemistry by Skoog and West
Recommended books and references (scientific journals, reports...)	mentioned above
Electronic References, Websites	Google, ResearchGate

First Year - Course Description 2025-2026

1. Course Name
Medical Physics
2. Course Code
103 PhMp
3. Semester/Year
First Semester / First Stage
4. Date this description was prepared
9-2025
5. Available Forms of Attendance
On campus
6. Number of Hours (Total) / Number of Credits (Total)
Theoretical Hours + 2 Practical Hours (30 Total Hours) / 2 Units
7. Course administrator name (if more than one name mentioned)
Name: Lecturer Zaid Mohamed Abdel Khaleq / Email: prof_x12@bcms.edu.iq

8. Course Objectives	
Course Objectives	1) It equips students with the ability to deal with physics concepts, and emphasizes the knowledge and skills required to perform the duties and responsibilities of a pharmacist efficiently. 2) Students will be able to understand the physical terms and abbreviations used to describe the lecture, and apply them in the medical field.

9. Teaching and Learning Strategies	
Strategy	1- Presentation and presentation 2. Discussions 3. Laboratory Experiments 4- Inverted Row

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	1	Physics Curriculum and Standards; System Thermodynamics and System Properties;	General Concepts	-Lectures - Presentation	- Written Exams - Oral exams

		Energy Conservation Principle		- Educational videos - Laboratory Experiments	- Experience reports Laboratory
2-3	2	-Pressure; temperature and temperature scales (Celsius, Fahrenheit, Kelvin); equation of state; ideal gas and real gas; general law of gases. -Heat and energy; work and mechanical forms of work; power; the 1st law of thermodynamics; Boyles and Charles law	Pressure; temperature and temperature scales Heat and energy;		
4-5	2	Medical Devices for: Blood Glucose Monitoring, Parenteral Infusion Devices, Cardiac Output Measurement	Medical Devices		
6	1	Implanted pacemakers	Implanted pacemakers		
7	1	Electrocardiogram (ECG)	Electrocardiogram (ECG)		
8	1	Electroencephalography (EEG)	Electroencephalography (EEG)		
9	1	Radiation: Kirshoffs law; planks law; Stefan-Boltzman law; Wiens law; Black body and Albedo; Heat transfer (radiation, convection, conduction).	Radiation		
10-11	2	X-Ray and X-Ray spectra; absorption of X-Ray; U.V and IR effects; medical	X-rays		

		and biological effects of radiation;			
12	1	Radiation therapy, radioactive iodine	Radiation therapy, radioactive iodine		
13	1	Magnetic resonance imaging (MRI)	Magnetic resonance imaging (MRI)		
14	1	Computed Tomography CT scan	Computed Tomography CT scan		
15	1	Diffusion and rheology	Propagation and Rheology		

11. Course Evaluation
Midterm Exam 15 marks Practical Side 20 marks Class Events 5 marks Final exam 60 marks

12. Learning and Teaching Resources	
Required Textbooks (Methodology) if available	1) Physics for Biology and Medical Students, 2nd ed. 2) Medical Instruments and Devices: principles and practices: Schreiner, Steven, CRC Press, 2015.
Main Reference (s)	
Recommended books and references (scientific journals, reports...)	
References, Websites	

First Year - Course Description 2025-2026

1. Course Name:
Medical Terminology
2. Course Code:
104 AClMt
3. Semester/Year:
First semester/ First year
4. Date of preparation of this description:
9-2025
5. Available Forms of Attendance:
On Campus
6. Number of Hours of Study (Total) / Number of Units (Total):
15 Hours / 1 Semester
7. Course administrator name (if more than one name mentioned):
Name: Assistant Lecturer Ibrahim Qais / Email: ibraheem.kais0@bcms.edu.iq
8. Course Objectives:
Scientific preparation of the student with regard to medical and scientific terms related to his study for the purpose of preparing a student who is able to deal with all the medical terms used in his study, in addition to choosing and defining medical terms from reliable sources.
9. Teaching and Learning Strategies
1. Presentation and presentation 2. Discussions 3. Tests
10. Course Structure

The week Week	Hours Hours	Required Learning Outcomes Learning Outcome	Module Name/Subject Subject/ chapter	Teaching Method Learning methods	Test Method Assessment method
1-2	2	Students will understand the basic knowledge of medical terminology from prefix and suffix	Introduction and body organization	Lectures, Group discussions	Quiz and exams

3	1	Students will be able to identify the most Important terminologies for the respiratory system	Respiratory system	Lectures, Group discussions	Quiz and exams
4	1	Students will be able to identify the most Important terminologies for the urinary system	Urinary system	Lectures, Group discussions	Quiz and exams
5	1	Students will be able to identify the most important terminologies for the integumentary system	Integumentary system	Lectures, Group discussions	Quiz and exams
6	1	Students will be able to identify the most important terminologies for the reproductive system	The reproductive system	Lectures, Group discussions	Quiz and exams
7-8	2	Students will be able to identify the most important terminologies for the gastrointestinal system	The gastrointestinal tract	Lectures, Group discussions	Quiz and exams
9-10	2	Students will be able to identify the most important terminologies for the Cardiovascular system	The heart and cardiovascular system	Lectures, Group discussions	Quiz and exams
11	1	Students will be able to identify the most important terminologies for women's reproductive system	Gynecology, pregnancy, and childbirth	Lectures, Group discussions	Quiz and exams
12	1	Students will be able to identify the most important terminologies for the vision System	The eye	Lectures, Group discussions	Quiz and exams
13	1	Students will be able to identify the most important	The nervous system and	Lectures, Group discussions	Quiz and exams

		terminologies for the nervous System	behavioral disorders		
14	1	Students will be able to identify the most important terminologies for the musculoskeletal system	Musculoskeletal System	Lectures, Group discussions	Quiz and exams
15	1	Students will be able to identify the most important terminologies for the lymphatic and immune system	Lymphatic and immune system	Lectures, Group discussions	Quiz and exams

11. Course Evaluation

20% Midterm Exam, 10% Student Assessment and Daily Exams, 70% Final Exam

12. Learning and Teaching Resources:

- Edward CC, (Ed.); A Short Course in Medical Terminology; 1st Ed.;
- Introduction to Medical Terminology, 1st Edition Authors: Linda Stanhope and Kimberly Turnbull
- The unified medical dictionary: English-Arabic (Unified Medical Dictionary). World Health Organization. Regional Office for the Eastern Mediterranean & Librairie du Liban Publishers. (2006). The unified medical dictionary: English-Arabic.
- Dictionary of Medical Terms (Arabic Language Academy/Egypt)

13. Recommended books and references (scientific fields, reports),

- Basic Medical Language.
- Medical Language for Modern Health Care.
- Mastering Healthcare Terminology.
- Medical Terminology for Health Care Professionals.
- Medical terminology for dummies

14. Electronic References, Websites:

https://iris.who.int/handle/10665/119845

First Year - Course Description 2025-2026

1. Course Name	
Biostatistics	
2. Course Code	
105 PhMb	
3. Semester/Year	
First Semester / First Stage	
4. Date this description was prepared	
9-2025	
5. Available Forms of Attendance	
In campus	
6. Number of Hours (Total) / Number of Credits (Total)	
Two theoretical hours (30 hours) / two units	
7. Course administrator name (if more than one name mentioned)	
Name: Lecturer Zaid Mohamed Abdel Khaleq / Email: prof_x12@bcms.edu.iq	
8. Course Objectives	
Course Objectives	1) Enable students to apply mathematical statistics in pharmaceutical sciences. 2) The use of biostatistics in certain pharmaceutical cycles, calculating the probability ratio and relative risk of an event. 3) Estimating the indicators of the statistical society and developing alternative hypotheses.
9. Teaching and Learning Strategies	
Strategy	1- Presentation and presentation 2. Discussions 3. Laboratory Experiments 4- Inverted Row

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1-2	4	Difference Between Biostatistics and Descriptive Statistics	Fundamentals of biostatistics and descriptive statistics	-Lectures - Whiteboard	- Written exams - Oral exams

3-4	4	Identify Derivation and Integration in Pharmaceutical Fields	Integration and differentiation	- Casual Information - Presentation -Charts - Educational videos	-Reports
5-6	4	Linking the calculation of the area under the curve to the kinetics of the drug	Applications of the area under the curve		
7-8	3	Identify the appropriate sample size and what are the null and alternative hypotheses	Samples and confidence intervals		
9	3	Knowledge of the relationships between dependent and independent variables	Dependent and independent variables		
10-11	3	To know the difference between a sample and a standard value	Correlation and regression		
12	3	Single-sample and two-sample tests	One-sample tests and		
13	2	Calculating the significant differences between the groups	Two-sample tests		
14	2	Parametric and non-parametric tests	Analysis of variance tests		
15	2	Calculating the relationship between categorical variables	Choices in the domain of non-normal distribution		

11. Course Evaluation

- 30 Theoretical Assessments (Paper Mid-Semester Exam + Attendance + Seminar)
- 70 marks of the final theoretical paper exam
- Total 100 Points

12. Learning and Teaching Resources

Required Textbooks (Methodology, if any)	1) Introductory Biostatistics for the Health Sciences, by Michael R. Chernick 1) Introductory Statistics Using SPSS, Second Edition, by Herschel Knapp.
Main Reference(s)	
Recommended books and references (scientific journals, reports...)	Introductory Biostatistics for Health Sciences, by Michael R. Chernick.
References, Websites	

First Year - Course Description 2025-2026

1. Course Name
Human Rights and Democracy
2. Course Code
106 PhHd
3. Semester/Year
First Semester/1st year
4. Date this description was prepared
9-2025
5. Available Forms of Attendance
in campus
6. Number of Hours (Total) / Number of Credits (Total)
Two theoretical hours (30 hours) / two units
7. Name of the course administrator (if more than one name is mentioned)
Name: Lecturer Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com
8. Course Objectives

Course Objectiv	• Introducing students to human rights, their most prominent characteristics, sources and stages • The history of human rights. • Learn how to exercise political rights. • Learn about the Universal Declaration of Human Rights, international conventions and treaties that stipulate human rights.
9. Teaching and Learning Strategies	
Strategy	• Presentation and Presentation • Interactive Discussions • Research and Induction

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	2	Understanding the Concept of Democracy	Definition of Democracy	Lectures and Discussions	Theoretical exam and

2	2	Recognizing the Emergence of Democracy Different Concepts of Democracy	The Emergence of Democracy Different Concepts of Democracy	Lectures and Discussions	classroom activities Theoretical exam and classroom activities
3	2	Characteristics of the Democratic System		=	=
4	2	Conditions, Components and Pillars of Democracy		=	=
5	2	Types of Democracy: Democracy in Islam		=	=
6	2	Majority Governance Systems		=	=
7	2	Pros and Cons of Democracy			
8	2	Principles of Common Democracy: Systems of Democracy		=	=
9	2	Civil and Political Rights		=	=
10	2	Types of Human Rights in International Law		=	=
11	2	Types of Human Rights in International Law		=	=
12	2	Universal Declaration of Human Rights		=	=
13	2	Differences in Rights in Religions		=	=
14	2	Women's and children's rights		=	=
15	2	Women's Rights between Sharia and Law		=	=

11. Course Evaluation	
Midterm exam 30 marks End of Semester Exam 70 Marks	
12. Learning and Teaching Resources	
Required Textbooks (Methodology) if available	Human Rights and Children's Democracy by Dr. Maher Saleh.
Main Reference(s)	Human Rights by Dr. Hamid Hannoun
Recommended books and references (scientific journals, reports...)	Human Rights in Islam - International Covenants and Arab Constitutions by Mr. Nawaf Kanaan
References, Websites	

First Year - Course Description 2025-2026

1. Course Name:
Physiology I
2. Course Code
107 AClph1
3. Semester/Year
Second Semester / First Year
4. Date this description was prepared
9-2025
5. Attendance
In campus
6. Number of Hours (Total) / Number of Credits (Total)
3 Theoretical Hours + 2 Practical Hours (75 Hours Total) / 4 Units
7. Course administrator name (if more than one name mentioned)
Theoretical: Name Assistant Professor Ahmed ALSaffar/Email: ahmadalsaffar@bcms.edu.iq Name: Assistant Lecturer Mohannad Mahdi Damad / Email mohened@bcms.edu.iq Practical: Name: Assistant Lecturer Ibrahim Qais Ismail / Email ibraheem.kais0@bcms.edu.iq
8. Course Objectives

Course Objectives	• To learn the principle of human physiology and the body organized. • To learn the cell structure, functions, and signaling • Learning how the nervous system works
9. Teaching and Learning Strategies	
Strategy	• Using YouTube to show the jobs of some members • Using some diagrams outside the prescribed curriculum to explain the mechanisms of work of some tissues • Periodic exams, which are either previously agreed upon or surprised

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method

1-4	5	Introduction to physiology: How is the body organized?	introduction	Lectures + Daily Exams	Lectures + Daily Exams
	5	Homeostasis: Framework for Human Physiology	Homeostasis:		
5-6	7	Understand the Cellular structure, protein, and metabolic pathways	Cellular structure, protein, and metabolic pathways		
7-8	7	Understand the Movement of Molecules across Cell Membranes	Movement of Molecules across Cell Membranes		
9-10	6	Understanding the Cell signaling in physiology	Cell signaling in physiology		
11-13	9	Understand the Neuronal signaling and the structure of the nervous system	Neuronal signaling and the structure of the nervous system		
14-15	6	Understanding Sensory physiology	Sensory physiology		

11. Course Evaluation
Midterm Exam 15 marks (Quizzes and homework 5 marks) Practical Part 20 Marks Final Semester Exam 60 Marks

12. Learning and Teaching Resources	
Required Textbooks (Methodology, if any)	Vander's Human physiology: the mechanisms of body function. Eric P. Widmaier, Hershel Raff, Kevin T. Strang, last edition
Main References (Sources)	
Recommended books and references (scientific journals, reports...)	

References, Websites	Research gate YouTube

First Year - Course Description 2025-2026

1. Course Name:
Pharmaceutical calculation (Theoretical+ Practical)
2. Course Code:
108 PhPhc
3. Semester / Year:
2nd Semester/1st year
4. Description Preparation Date:
9-2025
5. Available Attendance Forms:
on campus
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours Theoretical + 2 hours Practical (75) /4 units
7. Course administrator's name (mention all, if more than one name)
Theory: Name: Lecturer Ahmed Abdulameer Email: ahmed_abdulameer.abed@bcms.edu.iq Practical: Name: Lecturer Eman Gameel Email: eman.gameel@bcms.edu.iq Name: Assistant lecturer Zainab Abdulmuhsin Radhi Email: zainabradhi@bcms.edu.iq
8. Course Objectives
The students will be able to: 1. Differentiate between the various kinds of doses. 2. Describe the primary routes of drug/dose, administration and, for each, the dosage Forms utilized. 3. Perform calculations of doses involving household measures. 4. Perform calculations pertaining to the quantity of a dose, the dosage regimen, and the supply of medication required for the prescribed period..... 5. Describe factors to consider in determining doses for pediatric and elderly patients. 6. Calculating doses based on factors of age, body weight and body surface area.

7. Utilize dosing tables and nomograms in calculations 8. Calculate doses for single and combination chemotherapy regimens.
8. Calculate doses for single and combination chemotherapy regimens.
9. Differentiate between the terms isosmotic, isotonic, hypertonic, and hypotonic.
10. Apply physical chemical principles in the calculation of isotonic solutions.
11. Perform the calculations required to prepare isotone compounded prescriptions. Calculate the milliequivalent weight from atomic or formula weight.
12. Convert between milligrams and milliequivalents.
13. Calculate problems involving milliequivalents.
14. Calculate problems involving millimoles and milliosmoles.
15. form calculations for altering product strength by dilution, concentration, or fortification.
16. Perform calculations for the preparation and use of stock solutions.
17. Apply allegation medial and allegation alternate in problem-solving

9. Teaching and Learning Strategies

Strategy

Lectures and Presentation, Discussions, Laboratory experiments And Inverted classrooms with learning strategies:

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-5	**10**	- Dose Definitions - Routes of Drug/D Administration - Dosage Forms	Doses	- Lectures -White board -Data show -Power point -Explanatory diagrams	-Written exams - Oral exams -Laboratory reports
6-8	**6**	- Calculations of Dose Based on 1. Age 2. weight 3.BSA - Special Dosing Considerations in Cancer Chemotherapy	Dose parameters		

9-11	**6**	- Special Clinical Considerations Tonicity - Physical /Chemical Considerations in the Preparation of Isotonic Solutions	Isotonic solutions		
12-15	**8**	- Special Considerations of Altering Product Strength in Pharmaceutical Compounding - Relationship Between Strength and Total Quantity - Dilution and Concentration of Liquids - Strengthening of a Pharmaceutical Product - Stock Solutions - Dilution of Alcohol - Dilution of Acids	Electrolytes solutions Altering Product Strength Us Stock Solutions, and Problem-Solving by Allegation		

11. Course Evaluation

• 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)

• 20 M practical assessment (attendance + quiz + practice+ oral-based exam)

• 60 M paper-based theoretical final exam

_____ 100 M total

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Pharmaceutical calculation 3rd edition by Ansel
Main references (sources)	Pharmaceutical calculation 3rd edition by Ansel
Recommended books and references (scientific journals, reports...)	Pharmaceutical Calculations: A Conceptual Approach. 2019. Cham: Springer.
Electronic References, Websites	https://www.nps.org.au/assets/e1522a550c298d2818d3eafe5ce1-Extemporaneously-compoundedmedicines_40-119.pdf http://repo.upertis.ac.id/1819/1/FASTtrack%20Pharmaceutical%20Compounding%20and%20Dispensing.pdf

First Year - Course Description 2025-2026

1. Course Name	
Computer Sciences I	
2. Course Code	
109 PhCs	
3. Semester/Year	
Second Semester / First Year	
4. Date this description was prepared	
9-2025	
5. Available Forms of Attendance	
In campus	
6. Number of Hours (Total) / Number of Credits (Total)	
Theoretical Hours + 2 Practical Hours (45 Total Hours) / 2 Units	
7. Course administrator name (if more than one name mentioned)	
Name: Assistant Lecturer Dhiya Ibrahim Salman / Email: dhiya.ibrahim.salman@bcms.edu.iq	
8. Course Objectives	
Course Objectives	Comprehensive review of the principles of computer application, use of Microsoft Word application, and use of Google applications
9. Teaching and Learning Strategies	
Strategy	1- Presentation and presentation 2. Discussions 3. Laboratory Experiments 4- Inverted Row

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	2	Identify the software interface and compare it to the interface Google DOC	Introduction to Microsoft Word	-Lectures -Presentation - Educational videos - Laboratory Experiments	- Written Exams - Oral exams - Experience reports Laboratory
2	2	Using the ribbon in the insertion of mathematical equations and graphs	Drawer Bar		

3	2	Using the Ribbon in Sheet Layout	Layout Bar	=	=
4	2	It is used to add sources and content to the file and add margins	Reference Bar	=	=
5	2	Using Mailing Ribbon in Transmitter	Messaging Bar	=	=
6	2	Using the ribbon in the meanings of translation and adding a comment	Preview Bar	=	=
7	Midterm Exam				
8	2	Using the Ribbon in the Paper Preview	Display Bar	=	=
9	2	Learn about the program's interface and compare it to Google Slide	Introduction to PowerPoint (Main Bar)	=	=
10	2	Learn to save the file, edit and print	Main Tape	=	=
11	2	Learn to draw shapes and diagrams	Drawer Bar	=	=
12	2	Learning to Design Slides	Design Bar	=	=
13	2	To gain skill in moving slides	Transition bar, slideshow	=	=
14-15	4	Add videos and audio, view and preview slides	Transition bar, display bar, preview bar	=	=

11. Course Evaluation

Midterm Exam 15 marks

Practical Side 20 marks

Class Events 5 marks

Final exam 60 marks

12. Learning and Teaching Resources

Required Textbooks (Methodology) if available	Microsoft office Professional 2019, BY Linda Foulkes, Senior Editor: Afshaan Khan ISBN 978-1-83921-725-8
Main References (Sources)	
Recommended books and references (scientific journals, reports...)	Microsoft office Professional 2010, BY Joyce Cox, Jo an Lambert & Curtis Frge
Electronic References, Websites	

First Year - Course Description 2025-2026

1. Course Name:
Organic Chemistry I (Theoretical+ Practical)
2. Course Code:
110 ChPOc1
3. Semester / Year:
2nd Semester, 1st year
4. Description Preparation Date:
9/ 2025
5. Available Attendance Forms:
on campus
6. Number of Credit Hours (Total) / Number of Units (Total):
3 hours theory + 2 hours practical (60) / 4 units
7. Course administrator's name (mention all, if more than one name)
Theory: Name: Assistant lecturer Hasan Fadhil Email: hasan.fadhil@bcms.edu.iq Name: Assistant lecturer Omar Auday Yousif Email: omar_auday_yousif@bcms.edu.iq Practical: Name: Assistant lecturer Israa Abd Al Rasool Email: israaabdalrasol@bcms.edu.iq Name: Assistant lecturer Randa Khalid Email: randakhalid@bcms.edu.iq
8. Course Objectives

Course Objectives	1. Teaching the basics of organic chemistry. Understanding of the chemical compounds to facilitate the discovery of new compounds, including drugs. 2. Teaching the student about organic compounds from the simplest form, which is that organic compounds contain only carbon and hydrogen atoms, such as alkanes, alkenes, and alkynes, and the differences between them, as they are either saturated or unsaturated compounds, and their different activities and

	chemical reactions. Besides, other simple organic compounds containing functional groups such as alcohols, epoxides, alkyl halides and their different reactions. 3. Study the stereochemistry of different organic compounds and it is significance in drug- binding into biological receptors.

9. Teaching and Learning Strategies

Strategy	1- Theoretical lectures in the classroom 2- Educational laboratories 3- Conducting scientific studies 4- Various desk research 5- Seminars, weekly meetings, and homework. 6- Scientific research to serve society. 7- Explanatory and informative videos.

10. Course Structure

Week	Hour	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	studying the organic compound's chemical structure, physical properties, type of bonds formed between their molecules or with other different compounds. Also learn molecules chemical reactions, their uses in different fields, including medical field.	Introduction	Lectures	Oral and written exam
2-3	6	Alkanes are of huge importance in organic synthesis and other applications that involve dissolving organic compounds.	Alkanes and methane		

4-5	5	Giving an idea about the unsaturated organic compounds, their uses and the differences between them and the saturated compounds.	Alkenes 1 and 2		
6-7	5	Other unsaturated organic compounds useful in synthesis of different organic compounds with different substituents.	Alkynes and dienes		
8-9	8	Most of drugs are organic compounds in their nature so the stereochemistry is of critical importance to drug action because the shape of drug molecule is an important factor in determining how it interacts with the various biological molecules (enzymes, receptors, etc.) that it encounters in the body.	Stereochemistry 1 and 2		
10-11	6	Alcohol is among the most common organic compounds. They are valuable intermediates in the synthesis of other compounds and are among the most abundantly produced organic chemicals in industry.	Alcohol and ethers		

		Uses of ethers in health care industries: Ethers have a wide range of applications, including medical, laboratory purposes, perfume, flavoring agents.			
12-13	6	Alkyl halides are important in synthetic chemistry because they can be used as starting materials for a variety of reactions. These reactions include nucleophilic substitution, elimination, and addition reactions. Overall, alkyl halides are versatile building blocks in synthetic chemistry due to their ability to participate in a wide range of reactions	Alkylate halide		
14-15	4	Cyclic alkanes are major components of lubricating oils and used in chemical synthesis as solvents. The cyclopropane is a small ring is also found in many bioactive compounds, including natural products and drugs.	Cyclic alkanes		

11. Course Evaluation

- 20 M Theoretical assessments; (paper-based mid-term exam + attendance + seminar)
- 20 M practical assessment (attendance + quiz + practice+ oral-based exam)
- 60 M paper-based theoretical final exam

_____ 100 M total

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Required textbooks (curricular books, if any)
Main references (sources)	Main references (sources)
Recommended books and references (scientific journals, reports…)	Recommended books and references (scientific journals, reports…)
Electronic References, Websites	Electronic References, Websites

First Year - Course Description 2025-2026

1. Course Name	
Arabic Language	
2. Course Code	
111 PhArl	
3. Semester/Year	
Second Semester/First Stage	
4. Date this description was prepared	
9-2025	
5. Available Forms of Attendance	
On campus	
6. Number of Hours (Total) / Number of Credits (Total)	
Two Hours (30 Hours) / Two Units	
7. Course administrator name (if more than one name mentioned)	
Name: Mustafa Qasim Mohamed / Email: mustafaqasim93717@gmail.com	
8. Course Objectives	
Course Objectives	• Enabling students to learn sentence formation skills and know what wrong sentences produce has an impact on meaning. • Enable students to prepare scientific reports in Arabic
9. Teaching and Learning Strategies	
Strategy	• Presentation and Presentation • Interactive Discussions • Brainstorming • Research and Induction

10. Course Structure

The week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method
1	2	- From Surah Al-Baqarah, verses from (260-263)	The Qur'an and the Prophet's Hadith	Lectures and Discussions	Theoretical exam and

		From the hadith of the Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "I have been sent to perfect the noble morals."			classroom activities
2-3	4	- Poetic selections in the pre-Islamic era - The poem of Antara bin Shaddad: Oh Abel where is the smuggler from the death If God was in heaven, he spent it	Arabic Literature	=	=
4-5	4	- Balance of Accounts - Crowds in Arabic - Attribution of the verb to pronouns - Conduct of verbs in terms of: • Health and illness • Deprivation and increase • Derivatives	Al-Sarff	=	=
6	2	-Alphabets (solar and lunar) - Punctuation Provisions - Rulings on writing the Hamza (the first, the middle and the extreme, and the two Hamzas of the connection and the cut)	Language Skills	=	=
7-8	4	- Lexical schools The meanings of Western words in the Holy Qur'an, such as the words "Taffah",	Arabic Dictionaries	=	=

		"Farsha", "Naqira", and relying on the book of vocabulary by Ragheb Al-Isfahani. - The curriculum of the schools (Al-Ain) and (Al-Basas), and the practice on extracting words - One of the common language mistakes			
6	2	- From Surah Al-Hajj from verse (1-5) From the hadith of the Holy Prophet: The Messenger of Allah (may Allah's peace and blessings be upon him) said: "The best of you is the one who learns the Qur'an and teaches it."	The Holy Qur'an and the Prophet's Hadith	=	=
8	2	Seven verses from Ibn al-Rumi's verse: Your enemy is learned from your friend So don't have too many friends - Human values in pre-Islamic poetry - Islam and poetry	Arabic Literature	=	=
9-10	4	- Categories of speech and its expressions - The Arabized and the Built / Knowledge and the Denial - The Beginner and the News - Transcripts	Arabic grammar	=	=

		- Actor and Deputy			
11-15	8	- General Introduction to Arabic Rhetoric - Definition of language and idiom - An Introduction to the Definition of Rhetorical Sciences - Statement of its relationship with the Arabic language - Manifestology: (Definition and Types) - Simile: (Definition, Types, and Applications) - Truth and metaphor - Language metaphor (definition, its relations and applications) - Metaphor (definition, types, and applications) - Mental metaphor (its definition, relationships, and applications) - Metonymy (its definition, types, and applications) - Common language mistakes	Arabic Rhetoric	=	=
11. Course Evaluation					
Mid-term exam 20 marks Dialogue and Discussion Panels 10 Degrees End of Semester Exam 70 Marks					
12. Learning and Teaching Resources					

Required Textbooks (Methodology) if available	1- University Arabic Book for Non-Specialists, written Dr. Abdel Rajhi. 2- Arabic Language Book for Non-Specialization Departments Written Dr. Mohya Hilal.
Main Reference (s)	Explanation of Ibn Aqeel Part One
Recommended books and references (scientific journals, reports...)	Dictionaries and dictionaries
References, Websites	