## **Course Description Form**

1 C	urse Nam	٥.									
Organic Pharmaceutical Chemistry IV											
2. Course Code:											
Phpch23_516											
3. Semester / Year:											
1 <sup>st</sup> Semester/ 5 <sup>th</sup> Year											
4. Description Preparation Date:											
23/03/2024											
5. Available Attendance Forms:											
Students' signatures on attendance sheets											
6. Number of Credit Hours (Total) / Number of Units (Total)											
7 Co	ourse admi	inistrator's name (mentio	n all, if more than one	e name)							
Name: Pr	of. Dr. Ya	sser Fakhri		( munic)							
Email: dr.yassermustafa@uomosul.edu.iq											
Name: Assist. Prof. Dr. Mohammed Najim Abed											
Email: <u>m.n.abed@uomosul.edu.iq</u>											
Name: Assist. Prof. Dr. Moath Kahtan											
Email: moathkahtan@uomosul.edu.iq											
6. Course Objectives											
course o	• Introducing the students to advanced concepts										
combinatorial chemistry											
9. Teaching and Learning Strategies											
<b>Strategy</b> • Theory lectures with teaching aids such as videos and diagrams											
Strategy		• Theory lectures with	teaching aids such as	videos and diag	grams						
Strategy10.Court	rse Structu	• Theory lectures with re	teaching aids such as	videos and diag	grams						
Strategy10. CourWeek	rse Structu Hours	Theory lectures with re Required Learning	teaching aids such as Unit or subject	videos and diag	grams Evaluation						
Strategy     10. Cour     Week	rse Structu Hours	Theory lectures with re Required Learning Outcomes	teaching aids such as Unit or subject name	videos and diag	grams Evaluation method						
Strategy10.CourWeek1-3	rse Structu Hours 6	Theory lectures with re      Required Learning     Outcomes      Understanding the     concept of prodrugs	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs:</li> </ul>	videos and diag Learning method • Lectures	<b>Evaluation</b> method • Paper- based						
Strategy10.CourWeek1-3	rse Structu Hours 6	<ul> <li>Theory lectures with</li> <li>Required Learning</li> <li>Outcomes</li> <li>Understanding the concept of prodrugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds</li> </ul>	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy10.CourWeek1-3	rse Structu Hours 6	Theory lectures with re      Required Learning Outcomes      Understanding the concept of prodrugs	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable):</li> </ul>	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy     10. Cour     Week     1-3	rse Structu Hours 6	<ul> <li>Theory lectures with re</li> <li>Required Learning Outcomes</li> <li>Understanding the concept of prodrugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of</li> </ul>	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy     10. Cour     Week	rse Structu Hours 6	Theory lectures with re Required Learning Outcomes      Understanding the concept of prodrugs	teaching aids such as Unit or subject name • Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy     10. Cour     Week	rse Structu Hours 6	<ul> <li>Theory lectures with re</li> <li>Required Learning Outcomes</li> <li>Understanding the concept of prodrugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of</li> </ul>	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy     10. Cour     Week	rse Structu Hours 6	<ul> <li>Theory lectures with re</li> <li>Required Learning Outcomes</li> <li>Understanding the concept of prodrugs</li> </ul>	teaching aids such as Unit or subject name • Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs	videos and diag Learning method • Lectures	Evaluation method • Paper- based exams						
Strategy           10. Cour           Week           1-3           4-6	rse Structu Hours 6	Theory lectures with re Required Learning Outcomes      Understanding the concept of prodrugs      Understanding the	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	<b>Evaluation</b> method • Paper- based exams						
Strategy     10. Cour     Week       1-3     4-6	rse Structu Hours 6	Theory lectures with re Required Learning Outcomes      Understanding the concept of prodrugs      Understanding the role of polymers as delivery systems for	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	<b>Evaluation</b> method • Paper- based exams • Paper- based						
Strategy           10. Cour           Week           1-3           4-6	rse Structu Hours 6	<ul> <li>Theory lectures with re         Required Learning Outcomes     </li> <li>Understanding the concept of prodrugs</li> <li>Understanding the role of polymers as delivery systems for drugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	<b>Evaluation</b> method • Paper- based exams • Paper- based exams						
Strategy           10. Cour           Week           1-3           4-6	rse Structu Hours 6	Theory lectures with     Required Learning     Outcomes      Understanding the     concept of prodrugs      Understanding the     role of polymers as     delivery systems for     drugs	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs: Types</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	grams         Evaluation method         • Paper- based exams         • Paper- based exams						
Strategy       10. Cour       Week       1-3       4-6	rse Structu Hours 6	<ul> <li>Theory lectures with re</li> <li>Required Learning Outcomes</li> <li>Understanding the concept of prodrugs</li> <li>Understanding the role of polymers as delivery systems for drugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	Evaluation         method         • Paper-         based         exams						
Strategy       10. Cour       Week       1-3       4-6	rse Structu Hours 6	<ul> <li>Theory lectures with re         Required Learning Outcomes     </li> <li>Understanding the concept of prodrugs</li> <li>Understanding the role of polymers as delivery systems for drugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross-</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	Evaluation         method         • Paper-         based         exams						
Strategy           10. Cour           Week           1-3	rse Structu Hours 6	<ul> <li>Theory lectures with re</li> <li>Required Learning Outcomes</li> <li>Understanding the concept of prodrugs</li> <li>Understanding the role of polymers as delivery systems for drugs</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross- linking reagents</li> </ul>	<ul> <li>videos and diag</li> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> </ul>	<ul> <li>Evaluation method</li> <li>Paper- based exams</li> <li>Paper- based exams</li> </ul>						
Strategy         10. Cour         Week         1-3         4-6         7+8	rse Structu Hours 6 6 4	Theory lectures with re Required Learning Outcomes      Understanding the concept of prodrugs      Understanding the role of polymers as delivery systems for drugs      Understanding the	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross- linking reagents</li> <li>Drug targeting</li> </ul>	<ul> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> <li>Lectures</li> </ul>	<ul> <li>Evaluation method</li> <li>Paper- based exams</li> <li>Paper- based exams</li> <li>Paper- based exams</li> </ul>						
Strategy           10. Cour           Week           1-3           4-6           7+8	rse Structu Hours 6 6	<ul> <li>Theory lectures with the second second</li></ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross- linking reagents</li> <li>Drug targeting</li> </ul>	<ul> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> <li>Lectures</li> </ul>	<b>Evaluation</b> method <ul> <li>Paper-based exams</li> <li>Paper-based exams</li> </ul> • Paper-based exams • Paper-based exams						
Strategy           10.         Cour           Week	rse Structu Hours 6 6	<ul> <li>Theory lectures with re         Required Learning Outcomes     </li> <li>Understanding the concept of prodrugs</li> <li>Understanding the role of polymers as delivery systems for drugs</li> <li>Understanding the concept of targeting drugs to specific tigging and argoing</li> </ul>	<ul> <li>teaching aids such as</li> <li>Unit or subject name</li> <li>Basic concept of prodrugs; Covalent bonds (cleavable); Prodrugs of functional groups; Types of prodrugs</li> <li>Chemical delivery systems; Polymeric prodrugs; Types and structure of polymers; Cross- linking reagents</li> <li>Drug targeting</li> </ul>	<ul> <li>Learning method</li> <li>Lectures</li> <li>Lectures</li> <li>Lectures</li> </ul>	Evaluation method         • Paper- based exams         • Paper- based exams         • Paper- based exams         • Paper- based exams						

8-15	14	• Understanding the concept of combinatorial chemistry and library design	<ul> <li>Com chem Pepti other struc like f Supp linke phase com chem</li> <li>Dete purif analg Enco com libra throu scree Virtu scree Cher diver libra</li> </ul>	binatorial histry; ides and c linear tures; Drug molecules; oort and er; Solution- e binatorial histry ction, ction, ctation and gesics; oding binatorial ries; High- ighput ening; hal ening; hal ening; hical resity and ry design	• Lectures	• Paper- based Exams				
<ul> <li>11. Course Evaluation</li> <li>30 M: Theoretical assessment (paper-based midterm exam, attendance)</li> </ul>										
• 70 M: p	aper-based	d theoretical final exam								
100 M total										
12. Lear	ning and T	Feaching Resources								
Required textbooks (curricular books, if any)				Wilson and Gisvold Textbook of Orga medicinal and Pharmaceutical chemis Delgado JN, Remers WA, (Eds); 12thediti 2010						
Main references (sources)				Wilson and Gisvold Textbook of Orga medicinal and Pharmaceutical chemis Delgado JN, Remers WA, (Eds); 12thediti 2010						
Recomme	nded boo	oks and references (sci								
journals, r	<u>eports)</u> Referenc	es Websites								
Licenome										