



North Central State College  
MASTER SYLLABUS  
2019-2020

- A. Academic Division: Health Sciences
- B. Discipline: Bioscience Technology
- C. Course Number and Title: BIOS2550 Pharmaceutical & Toxicology Bioscience
- D. Course Coordinator: Jason Tucker, M.S.  
Assistant Dean: Melinda Roepke, MSN, RN

Instructor Information:

- Name: [Click here to enter text.](#)
- Office Location: [Click here to enter text.](#)
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- E. Credit Hours: 4  
Lecture: 2 hours  
Laboratory: 4 hours
- F. Prerequisites: BIOS2410, CHEM1210  
Co-requisite(s): BIOS 2530
- G. Syllabus Effective Date: Fall, 2019
- H. Textbook(s) Title:

*Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy*

- Author(s): David E. Golan, Ehrin J. Armstrong, April W. Armstrong
- Copyright Year: 2017
- Edition: 4th
- ISBN: 9781451191004

On-line Government Reference Material

- I. Workbook(s) and/or Lab Manual: None
- J. Course Description: This course is intended to give students an overview of basic Pharmaceutical and Toxicology concepts and methods. The overall organization of the course is grouped into three sections: Part I (Introduction), Part II (Methodologies), and Part III (Analysis). Parts I and II comprise approximately one-half the course and Part III the remaining half. This course is based on lectures, labs, and project assignments, and is to help the student (1) understand the various techniques in biotechnology, their applications in the manufacturing of biopharmaceuticals, and biomedical research; (2) gain knowledge in some of the physicochemical properties, pharmacology and the formulation of commonly used biopharmaceuticals; and (3) understand the principles of the mechanism of some biotechnologically derived diagnostic aids/tests.

K. College-Wide Learning Outcomes

<b>College-Wide Learning Outcomes</b>	<b>Assessments - - How it is met &amp; When it is met</b>
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

<b>Outcomes</b>	<b>Assessments – How it is met &amp; When it is met</b>
1. Identify and describe sources of peer review information.	Weekly lab notebook entry. Written homework assignment-Week 1-2; First interim exam-Week 6; Final exam
2. Explain how to evaluate valid information.	Weekly lab notebook entry. Written homework assignment-Week 3; First interim exam-Week 6; Final exam
3. Identify and describe the process of biopharmaceutical drug production.	Weekly lab notebook entry. Written homework assignment-Week 1-2; First interim exam-Week 6; Final exam
4. Identify and describe the process of gene therapy.	Weekly lab notebook entry. Written homework assignment-Week 4; First interim exam-Week 6; Final exam
5. Identify and describe the process of therapeutic effects.	Weekly lab notebook entry. Written homework assignment-Week 5; First interim exam-Week 6; Final exam
6. Identify and describe the process of marketing new drugs.	Weekly lab notebook entry. Written homework assignment-Week 6; Second interim exam-Week 12; Final exam
7. Identify and describe the process of pharmaceutical biotechnology.	Weekly lab notebook entry. Written homework assignment-Week 7; Second interim exam-Week 12; Final exam
8. Identify and describe the process of postmortem forensic toxicology.	Weekly lab notebook entry. Written homework assignment-Week 8; Second interim exam-Week 12; Final exam
9. Identify and describe the process of human performance toxicology.	Weekly lab notebook entry. Written homework assignment-Week 9; Second interim exam-Week 12; Final exam
10. Identify and describe the process of forensic drug testing.	Weekly lab notebook entry. Written homework assignment-Week 10; Second interim exam-Week 12; Final exam
11. Identify and describe the process of specimen preparation.	Weekly lab notebook entry. Written homework assignment-Week 11; Second interim exam-Week 12; Final exam
12. Identify and describe the basic process of spectrophotometry.	Weekly lab notebook entry. Written homework assignment-Week 12; Second interim exam-Week 12; Final exam
13. Identify and describe the basic process of gas chromatography	Weekly lab notebook entry. Written homework assignment-Week 13;Final exam
14. Identify and describe the basic process of immunoassay.	Weekly lab notebook entry. Written homework assignment-Week 14; Final exam
15. Identify and describe the basic process of mass spectrometry.	Weekly lab notebook entry. Written homework assignment-Week 12; Second interim exam-Week 12; Final exam
16. Identify and describe the basic process of methods validation.	Weekly lab notebook entry. Written homework assignment-Week 15; Final exam
17. Identify and describe the basic process of acidic drugs	Weekly lab notebook entry. Written homework assignment-Week 15; Final exam
18. Identify and describe the basic process of basic drugs	Weekly lab notebook entry. Written homework assignment-Week 15; Final exam

M. Topical Timeline (Subject to Change):

Week	Topical Timeline
1 and 2	<ul style="list-style-type: none"> <li>Sources of information</li> <li>Evaluating information</li> </ul>
3	<ul style="list-style-type: none"> <li>Biopharmaceutical drug production</li> </ul>
4 and 5	<ul style="list-style-type: none"> <li>Gene therapy</li> <li>Therapeutic effects</li> </ul>
6 and 7	<ul style="list-style-type: none"> <li>Marketing new drugs</li> <li>Pharmaceutical biotechnology</li> </ul>
8-10	<ul style="list-style-type: none"> <li>Postmortem Forensic Toxicology</li> <li>Human Performance Toxicology</li> <li>Forensic Drug Testing</li> <li>Specimen Preparation</li> </ul>
11 and 12	<ul style="list-style-type: none"> <li>Spectrophotometry</li> <li>Mass Spectrometry</li> </ul>
13 and 14	<ul style="list-style-type: none"> <li>Gas Chromatography</li> <li>Immunoassay</li> </ul>
15 and 16	<ul style="list-style-type: none"> <li>Methods Validation</li> <li>Acidic Drugs</li> <li>Basic Drugs</li> </ul>

N. Course Assignments:

1. Reading assignments (Weeks 1-15)
2. Written homework assignment (Weeks 1-15)
3. Lab Notebook check-offs (Week 1-15)
4. Oral presentation (Week 5)
5. Group presentation (Week 14)
6. Interim exams (Week 6 and 12)
7. Final Exam (Week 16)

O. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93-100	A	4.00	Superior
90-92	A-	3.67	Superior
87-89	B+	3.33	Above Average
83-86	B	3.00	Above Average
80-82	B-	2.67	Above Average
77-79	C+	2.33	Average
73-76	C	2.00	Average
70-72	C-	1.67	Below Average
67-69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

**Important information regarding College Procedures and Policies can be found on the [syllabus supplement](#) located at <https://sharept.ncstatecollege.edu/committees/1/curriculum/SiteAssets/SitePages/Home/SYLLABUS%20SUPPLEMENT.pdf>**

**The information can also be found** Choose an item.