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Spring 2019

# CHEM 777-102: Principles of Pharmaceutical Chemistry

Pradyot Patnaik

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**Chemistry:**  
*Spring 2019 Course*  
*Syllabus*

**NJIT Academic Integrity Code:** All students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

**COURSE INFORMATION**

**Course Description:** Principles of Pharmaceutical Chemistry, CHEM 777 is a core course designed to acquaint students to fundamentals of pharmaceutical Chemistry including many important biochemical reactions, biomolecular structures, binding and molecular interactions, drug targets such as, proteins, nucleic acids and enzymes. In addition, the topics would highlight pharmacokinetics, drug absorption and distributions, designing drugs based on their chemical structures and quantitative structure activity relationships. Also there would be discussions on common drugs and their functions.

**Number of Credits:**

**Prerequisites:** Students must have an in-depth understanding of general, organic and biochemistry.

**Course-Section and Instructors**

Course-Section	Instructor
Principles of Pharma Chemistry	Prof. Pradyot Patnaik
CRN 11520 - CHEM 777-102	

**Office Hours:** As per prior appointment

**Required Textbook:**

<b>Title</b>	An Introduction to Medicinal Chemistry
<b>Author</b>	Graham L. Patrick
<b>Edition</b>	6th Edition
<b>Publisher</b>	Oxford University press
<b>ISBN#</b>	978-0-19-874969-1

## Learning Outcomes:

## POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

**Grading Policy:** The final grade in this course will be determined as follows:

Exam 1	100 points
Exam 2	100 points
Project report on an assigned topic	50 points

Your final letter grade in this course will be based on the following tentative curve:

A	90 % and above	C	50 to 59 %
B+	80 to 89 %	D	40 to 49 %
B	70 to 79 %	F	Below 40 %
C+	60 to 69 %		

**Attendance policy:** Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply “getting the notes.”

**Exams:** There will be two exams during the semester and students have to write a paper on an assigned topic. The following exam periods are tentative, subject to change:

Exam 1	March, 2019
Exam 2	April, 2019
Assigned topic	May, 2019

**Make-up Exam Policy:** There will normally be **NO MAKE-UP EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor’s note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

**Cellular Phones:** All cellular phones and other electronic devices must be switched off during all classtimes. Such devices must be stowed in bags during exams or quizzes.

## ADDITIONAL RESOURCES

**Chemistry Tutoring Center:** Located in the Central King Building, Lower Level, Rm.G12. Hours of operation are Monday - Friday 10:00 am -6:00 pm. For further information please click [here](#).

**Accommodation of Disabilities:** Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-417 or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support service provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentssuccess/disability-support-services/>

**Important Dates** (See: Spring 2019 Academic Calendar)

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## Course Outline

Lecture	Section	Topic	Assignment
1		An Overview: Drugs, Activity, Potency and Side Effects	
2		Protein Structures and Functions, Binding	
3		Enzyme Structures, Substrate Binding and Kinetics	
4		Nucleic Acids: Structures and Functions of DNA and RNA	
5		Receptors: Types, Activation, Signal Transduction	
6		Drug Targets: Enzyme, Isozymes, Inhibitors, Medicinal Uses	
7		Drug Targets: Receptors, Design, Tolerance, Efficacy	
8		Drug Targets: Nucleic Acids, Alkylating Agents	
9		<i>Exam 1</i>	

10		Other Drug Targets: Proteins, Lipids, Carbohydrates	
11		Drug Actions: Absorption, Distributions, Metabolism	
12		Drug Discovery/Design: Finding a Lead, Screening, Bioassay	
13		Quantitative Structure Activity Relationship	
14		Antibacterial, Antiviral & Anticancer Agents: Course Review	
15		<b><i>Exam 2 and Submission of Reports on Assigned Topic</i></b>	
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