

Fall 2019

CHEM 714-101: Pharmaceutical Analysis

Hao Chen

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Chemistry: *Fall 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

CHEM 714 Course Description: The objective of the course is to provide an overview of instrumental techniques used in pharmaceutical analysis. Different analytes existing in different sample matrices need to be identified and quantified. Different sample preparation techniques and analytical instrumentation are needed for analyzing these compounds. The focus of this class will be on instrumentation including chromatography, mass spectrometry and different types of spectroscopy. This course will also cover the rules governing the pharmaceutical industry in the US including current Good Manufacturing Practices (cGMP), method validation, and current industry guidance.

Number of Credits: 3

Prerequisites: CHEM 222

Course-Section and Instructors

Course-Section	Instru ctor
CHEM 714-101 (Pharmaceutical Analysis) Wed, 6:00-9:05pm, FMH 409	Prof. Hao Chen Email: hao.chen.2@njit.edu Telephone: 740-249-5803

Office Hours for All Chemistry & Environmental Science Instructors: Wednesday 6-6pm or by appointment.

Textbook (recommended, not required):

Title	Principles of Instrumental Analysis
Author	Skoog
Edition	7 th edition

Publisher	Cengage Learning
ISBN #	978-1305577213

Second reference: Method Validation in Pharmaceutical Analysis: A Guide to Best Practice, 2nd Edition By: Joachim Ermer (Editor), Phil W. Nethercote (Editor) ISBN: 978-3-527-33563-3

University-wide Withdrawal Date: The last day to withdraw with a W is Monday, November 11, 2019. It will be strictly enforced.

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:

Homework	20%
Term paper	10%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	25%
Attendance	5%

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

A	90-100	C	70-75
B+	86-89	D	60-69
B	80-85	F	<60
C+	76-79		

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.”

Homework Policy: Homework is an expectation of the course. The homework problems set by the instructor are to be handed in for grading and will be used in the determination of the final letter grade as described above.

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The following exam periods are tentative and therefore possibly subject to change:

Midterm Exam I	
Midterm Exam II	
Final Exam Period	December 14 - 20, 2019

The final exam will test your knowledge of all the course material taught in the entire course.

Makeup 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 an 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 class times. 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 973-596-5417 or via email at 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 services provided please visit the Accessibility Resources and Services (OARS) website at:

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

Important Dates (See: [Fall 2019 Academic Calendar, Registrar](#))

Date	Day	Event
September 3	T	First Day of Classes
September 13	F	Last Day to Add/Drop Classes
November 11	M	Last Day to Withdraw
November 26	T	Thursday Classes Meet
November 27	W	Friday Classes Meet
November 28 - December 1	R - Su	Thanksgiving Break - University Closed
December 11	W	Last Day of Classes
December 12-13	R - F	Reading Day
December 14-20	Sa - F	Final Exam Period

Lecture	Date	Topic	Assignment
1	Sep 4	Introduction	
2	Sep 11	Fundamentals of Spectroscopy	
3	Sep 18	Applications of Spectroscopy	
4	Sep 25	Instrumentation of Spectroscopy	
5	Oct 2	Gas Chromatography (GC)	
6	Oct 9	Liquid Chromatography (LC)	
7	Oct 16	Electrophoresis (CE)	
8	Oct 23	Mass Spectrometry—History, ESI and MALDI	
9	Oct 30	Midterm Exam I	6:00-9:05pm, FMH 409
10	Nov 6	Mass Spectrometry—EI and Ion Dissociation	
11	Nov 13	Good Manufacturing Practice (GMP)	
12	Nov 20	Method Validation	
13	Nov 27	Regulation	
14	Dec 4	Midterm Exam 2	6:00-9:05pm, FMH 409
15	Dec 11	Term Paper Presentation	
16	Dec 14-20	Final Exam	TBA

Updated by Genti Price - August, 2019
Department of Chemistry & Environmental Sciences (CES)
Course Syllabus, Fall 2019

