

Instrumental Methods III: Spectroscopy

Chem 4190/6190 Spring 2019

Instructors: **Dr. Tarushee Ahuja** - Lecture (TR 12.00-12.45 pm)
Office: 203 Courtland North, email: tahuja1@gsu.edu
Office Hours: Monday 12-1, Thursday 11-12, or by appointment

Dr. Yanyi Chen - Lab Thursday (1:30pm-5.15 pm)
Office: 694 Kell Hall; email: ychen46@gsu.edu
Office Hours: By appointment

Location: Lecture: PSC 233
Lab: SA 562

Text: Principles of Instrumental Analysis, Sixth Edition, 2007
Authors: Skoog, Holler and Crouch
Publisher: Harcourt Brace Javonovich College Publisher

Online

Material: i-college

Final Exam: TBA

Course

Prerequisites: Chem 4000/6000 and Chem 4120/6120 or their equivalents.

Study Tips: Attend all the classes and do homework to get better scores.

Grading: 30 min quizzes will be given during the lecture on alternate Thursdays in the lecture class. It will be over material covered during the previous week of lecture. The lowest two quizzes scores will be dropped. No open book, but one little sheet of notes (only literature, formulas or constants values) can be brought.

Grade Breakdown:

Lab Reports, Lab, Quizzes, notebook	30%
Lecture Quizzes	40%
Final Exam	30%

The last day to withdraw with a W is 5th March 2019.

Due dates of Lab papers: see the lab syllabus.

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Letter grades are assigned based on the following scale (double the marks earned):

Total Course Points Earned	Total Course Points Earned (%)	Letter Grade
>765	>95.6	A+
720-764	90.0-95.5	A
696-719	87.0-89.9	A-
684-695	85.5-86.9	B+
640-683	80.0-85.4	B
616-639	77.0-79.9	B-
584-615	73.0-76.9	C+
560-583	70.0-72.9	C
536-559	67.0-69.9	C-
480-535	60.0-66.9	D
<480	<60.0	F

The quizzes and final exam will be almost exclusively on material covered in the lectures.

University policy requires that faculty members must, on a date after the midpoint of the course to be set by the provost (or his designee) 1) give a WF to all those students who are on the roll but no longer taking the class and 2) report the last day that the student attended or turned in an assignment.

Policy Statement Regarding Student Integrity

The Georgia State University Policy on Academic Honesty is in force in this course, including but not necessarily limited to infractions in the areas of Plagiarism, Cheating on Examinations, Unauthorized Collaboration, Falsification, and Multiple Submissions. The university's policy is published in the *On Campus: The Student Handbook*, available to all members of the university community. Therefore, all tests taken must represent your individual unaided efforts. To receive or offer information during an examination is cheating. The use of unauthorized supplementary materials during tests is also cheating. All laboratory work performed during the lab portion of a course must reflect your individual effort. Only original data obtained by your own in-lab experimentation are permitted to be used, except when specifically authorized by your laboratory professor. Data from supplementary sources (handbooks, reference literature, etc.) must be clearly referenced (title, author, volume, page(s), etc.). Falsification or destruction of data constitutes cheating. Conduct or actions that disrupt class or test periods or falsification of information related to chemistry courses by any student will be taken as violation of the policies of the Board of Regents of the University System of Georgia and the GSU Student Code of Conduct, Section 6.0. Any suspected offenses may be referred to the Department Chair or the Dean of Students for appropriate disciplinary action.

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Tentative Schedule

Date	Subject	Reading
01/15/2019	Orientation, Syllabus Discuss UV Visible	Chapter 6
01/17/2019	UV Visible	Chapter 6
01/22/2019	UV Visible	Chapter 7
01/24/2019	UV Visible	Chapter 7
01/29/2019	UV Visible	Chapter 7
01/31/2019 Quiz-1	UV Visible	Chapter 13
02/05/2019	UV Visible	Chapter 13
02/07/2019	UV Visible	Chapter 14
02/12/2019	UV Visible	Chapter 14
02/14/2019 Quiz-2	HQS & Mg ²⁺ Experiment	Lab Manual
02/19/2019	Fluorescence	Chapter 15
02/21/2019	Fluorescence	Chapter 15
02/26/2019	Fluorescence	Chapter 15
02/28/2019 Quiz-3	FL Depolarization	
03/05/2019	IR	Chapter 16
03/07/2019	IR	Chapter 16
03/12/2019	IR	Chapter 17
03/14/2019 Quiz-4	Error Analysis	Appendix 1
03/19/2019	Spring Break	
03/21/2019	Spring Break	
03/26/2019	Mass Spectroscopy	Chapter 20
03/28/2019	Mass Spectroscopy	Chapter 20
04/02/2019	Raman & Scattering	Chapter 18
04/04/2019 Quiz-5	Dynamic Light Scattering	Chapter 34
04/09/2019	NMR	Chapter 19
04/11/2019	NMR	Chapter 19
04/16/2019	NMR	Chapter 19
04/18/2019 Quiz-6	Circular Dichroism	Handout
04/23/2019	Review	
04/25/2019	Review	
04/30/2019	Final Exam	