

Instrumental Methods III: Spectroscopy

Chem 4190/6190 Fall 2018

Instructors: **Dr. Tarushee Ahuja** - Lecture (TR 5:30-6:20 pm)
Office: 208 Courtland North, email: tahuja1@gsu.edu
Office Hours: Tuesday- 3:15-5:15 pm, or by appointment

Dr. Yanyi Chen - Lab Thursday (12:30pm-3:45 pm)
Office: 694 Kell Hall; email: ychen46@gsu.edu
Office Hours: By appointment

Dr. Gregory Poon - Lab Tuesday Session (12:30pm-3:45 pm)
Office: 415 NSC; email: gpoon@gsu.edu
Office Hours: By appointment

Location: Lecture: CLSO 208
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: 4th December 4.15pm

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 9th October, 2018.

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
08/21/2018	Orientation, Syllabus Discuss UV Visible	Chapter 6
08/23/2018	UV Visible	Chapter 6
08/27/2018	UV Visible	Chapter 7
08/30/2018	UV Visible	Chapter 7
09/04/2018	UV Visible	Chapter 7
09/06/2018 Quiz-1	UV Visible	Chapter 13
09/11/2018	UV Visible	Chapter 13
09/13/2018	UV Visible	Chapter 14
09/18/2018	UV Visible	Chapter 14
09/20/2018 Quiz-2	HQS & Mg ²⁺ Experiment	Lab Manual
09/25/2018	Fluorescence	Chapter 15
09/27/2018	Fluorescence	Chapter 15
10/02/2018	Fluorescence	Chapter 15
10/04/2018 Quiz-3	FL Depolarization	
10/09/2018	IR	Chapter 16
10/11/2018	IR	Chapter 16
10/16/2018	IR	Chapter 17
10/18/2018 Quiz-4	Error Analysis	Appendix 1
10/23/2018	Raman & Scattering	Chapter 18
10/25/2018	Dynamic Light Scattering	Chapter 34
10/30/2018	Circular Dichroism	Handout
11/01/2018 Quiz-5	NMR	Chapter 19
11/06/2018	NMR	Chapter 19
11/08/2018	NMR	Chapter 19
11/13/2018	NMR	Chapter 19
11/15/2018 Quiz-6	Mass Spectroscopy	Chapter 20
11/20/2018	Thanksgiving Holiday	
11/22/2018	Thanksgiving Holiday	
11/27/2018	Mass Spectroscopy	Chapter 20
11/29/2018	Review	
12/04/2018	Final Exam	