

Chemistry 341.3
Principles of Instrumental Analysis
Queens College, Fall 2020

- Instructors** Dr. Jianbo Liu
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http://chem.qc.cuny.edu/~jliu/Liu_page/Liu_main.htm
Office Hours: Tuesdays 5:00 pm - 6:00 pm, on line
- Lectures** Tuesdays and Thursdays, 9:30 am – 10:45 am, on line
- Textbook** D. A. Skoog, F. J. Holler, and S. R. Crouch, *Principles of Instrumental Analysis*, 7th ed., Thomson Brooks/Cole, 2018. (Required)
PowerPoint slides are provided at http://chem.qc.cuny.edu/~jliu/Liu_page/teaching.htm
- Grading** Randomly scheduled quizzes and Homework – 30%
In-class exams – 30%
Final exam – 40%

Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.

Lecture Schedule

Date	Meeting No. and Topics
Aug 27	1) Introduction to Instrumental Analysis (chapter 1)
Sep 1	2) Signals and Noise (chapter 5)
Sep 3	3) Introduction to Spectroscopy (chapter 6)
Sep 8	4) Components of Optical Instruments (chapter 7)
Sep 11	5) Molecular Spectroscopy: UV-Visible Spectroscopy (chapter 13)
Sep 15	6) Molecular Spectroscopy: UV-Visible Spectroscopy (chapter 14)
Sep 17	7) Molecular Spectroscopy: Luminescence Spectroscopy (chapter 15)
Sep 22	8) Molecular Spectroscopy: Luminescence Spectroscopy (chapter 15)
Sep 24	9) Molecular Spectroscopy: Infrared Spectroscopy (chapter 16)
Sep 29	Monday Schedule
Oct 1	10) Exam I
Oct 6	11) Molecular Spectroscopy: Infrared Spectroscopy (chapter 17)
Oct 8	12) Molecular Spectroscopy: Raman Spectroscopy (chapter 18)
Oct 13	13) Molecular Spectroscopy: Raman Spectroscopy (chapter 18)
Oct 15	14) Introduction to Separation Science 1 (chapter 26)
Oct 20	15) Introduction to Separation Science 2 (chapter 26)
Oct 22	16) Gas Chromatography (chapter 27)
Oct 27	17) High Performance Liquid Chromatography (chapter 28)
Oct 29	18) High Performance Liquid Chromatography (chapter 28)
Nov 3	19) Exam II
Nov 5	20) Principles of Mass Spectrometry (chapter 11)
Nov 10	21) Design of Mass Spectrometry (chapter 20)
Nov 12	22) Applications of mass spectrometry
Nov 17	23) Introduction to Electroanalytical Chemistry (chapter 22)
Nov 19	24) Potentiometry (chapter 23)
Nov 24	24) Coulometry (chapter 23)
Nov 26	Thanksgiving
Dec 1	26) Voltammetry (chapter 25)
Dec 3	27) Exam III
Dec 8	28) Review
Dec 17	Final Exam

Exam Information:

Exam I	Chapters covered:	1, 5 –7, 13 – 15
Exam II	Chapters covered:	16 – 18, 26 – 28
Exam III	Chapters covered:	11, 20, 22, 23, 24, 25
Final Exam		the entire semester's material