

CHGN 411/511, Applied Radiochemistry Spring Semester, 2018

Radiochemistry and Nuclear Chemistry, Third Edition - G.R. Choppin, J. Rydberg, J-O.

Liljenzin (Butterworth)

Nuclear Forensic Analysis, First Edition - Kenton J. Moody, Ian D. Hutcheon, Patrick M. Grant

Chemistry of the Actinide & Transactinide Elements

Radiochemistry & Nuclear Methods of Analysis, Ehmann & Vance

Tentative Schedule:

Week 1.	W: Introduction/Nomenclature R: Nuclear Structure F: Mass Energy Conversion/Equivalence	Choppin / Ehmann	Week of 1/8
Week 2.	M: No Class – MLK Day (1/15) W: Radioactive Decay F: Radioactive Decay Kinetics	Choppin / Ehmann	Week of 1/15
Week 3.	M: Big Bang W: Heavy Element Synthesis/Island of Stability F: Radiochemistry Instrumentation	Choppin / Ehmann	Week of 1/22
Week 4.	M: Gen Chem Rev I – Periodic Trends W: Gen Chem Rev I – Coordination Chemistry F: Gen Chem Rev I – Redox Chemistry	Choppin / Shafer	Week of 1/29
Week 5.	M: Fission Product Chemistry (Zr, Mo, Tc, Ru, Cs) W: Fission Product Chemistry (Zr, Mo, Tc, Ru, Cs) II F: Actinide Chemistry Overview	Woodhead / CATE	Week of 2/5
Week 6.	M: Uranium W: Neptunium F: Plutonium	CATE	Week of 2/12
Week 7.	M: President's Day – No Class (2/19) W: Review F: Exam I (2/21)	CATE / Harris	Week of 2/19
Week 8.	M: Trivalent Actinides W: Analytical Separations Introduction F: Fuel Cycle Introduction/Reactors	Choppin / Ehmann	Week of 2/26
Week 9.	M: Uranium Mining W: Uranium Enrichment F: Thorium Fuel Cycle	Choppin	Week of 3/5
Week 10.	M: Hanford/Cold War W: Hanford/Cold War Continued F: Advanced Reprocessing	Choppin / Woodhead	Week of 3/12
Week 11.	M: Nuclear Accidents W: Review F: Exam II (3/23)	Choppin	Week of 3/19
	Spring Break!		Week of

			3/26
Week 12.	M: Nuclear Forensics - Terminology W: Nuclear Forensics - Post-detonation F: Nuclear Forensics - Pre-detonation	Moody / Harris	Week of 4/3
Week 13.	M: No Class W: No Class F: No Class – E-days Mines		Week of 4/10
Week 14.	M: Nuclear Forensics – Radioanalytical W: Nuclear Forensics – Analytical F: Radiopharmaceuticals – Overview	Choppin / Ehmann	Week of 4/17
Week 15.	M: Radioanalytical – Coordination Chemistry W: Radiopharmaceuticals – Drug Design F: Radiopharmaceuticals – Production	Choppin / Ehmann	Week of 4/24
Week 16.	M: Radiopharmaceuticals – Generators W: Exam III Radiopharmaceuticals – Production		Week of 5/1

- Grading:** There will be 3 in class exams (100 pts each) (Feb. 22, Mar 24, and May 3). Additionally, there will be regular short in class quizzes on Friday (first 10 minutes) that collectively (best 10) can be used to replace one of the exams. Students may opt to accept their grade from either 3 exams or 2 exams and best 10 quizzes. Five homework assignments (25 points each) based out of the Choppin Nuclear & Radiochemistry text will also contribute to the course grade.
- CSM policy for student absences from class, labs, or exams.**
All students are advised to be familiar with CSM's policy regarding the make-up of work missed due to excused absences. This policy may be found in the Bulletin. If a student is ill and exhibits flu-like symptoms, they should not attend class, labs, or exams. For this particular flu season, the Centers for Disease Control are discouraging those who are ill and without serious complications from visiting a health clinic or physician thus it will be difficult for students to obtain written documentation of their illness for the Associate Dean of Students and for faculty. In order for an absence based on illness to be excused, the student must normally communicate directly with the Associate Dean of Students or his/her instructors. To make this notification process easier, particularly in the case of students suffering flu-like symptoms, we have created a web-based certification system, and strongly encourage students to use this system to automatically notify all of their instructors regarding their illness.

There will be no tolerance of academic dishonesty of any form. This includes cheating, copying, plagiarism and any other forms of dishonesty. If a student is caught participating in any of these activities they will immediately be given a zero for the assignment and reported to the university to have a note added to the students file and to decide whether further disciplinary action is appropriate.

