

The Analytical Timetable

	Year I		Year II		Year III		Year IV+
	Fall	Spring	Fall	Spring	Fall	Spring	All
Coursework	[Yellow bar]						
Cumes	[Yellow bar]						
Choose Research Advisor	[Yellow bar]						
Research		[Yellow bar]					
Prepare for & make Research Presentation				[Yellow bar]			
Prepare for & take Oral Exam					[Yellow bar]		

A Road Map for KU Graduate Study

1. Distribution Requirements (Analytical, Biochemistry, Inorganic, Organic, Physical)
 - Pass 3 out of 5 by end of second semester of graduate study
2. Divisional Course Requirements
 - 6-7 courses
 - Additional courses for Training Grants
3. FLORS Requirements (Foreign Language or Research Skill)
 - Foreign Language
 - Computer Programming
 - Electronics
 - Library Bibliography
4. Cumulative Exams
5. Oral Preliminary Examination
 - Research Presentation and Original Proposal
6. Final Defense

Distribution Course Requirements (3 of 5 required)

Distribution Courses (MUST include 731)

- CHEM 731: Fundamentals and Methods of Analytical Chemistry
- CHEM 737: Coordination and Organometallic Chemistry
- CHEM 740: Principles of Organic Reactions
- CHEM 750: Quantum Chemistry and Spectroscopy
- BIOL 658: Biochemistry

Core Analytical Courses (4 of 4 required)

- CHEM 904 Separations (Spring)
- CHEM 920 Mass Spectrometry (Spring)
- CHEM 908 Spectrochemical Methods of Analysis (Fall)
- CHEM 925 Bioanalysis (Fall)

FLORS (Foreign Language or Research Skill) Requirement (1 required)

- BIOL 703 Radiation Safety (All semesters)

OR

- CHEM 720 Bibliography of Chemistry (Spring)

OR

- Foreign Language Skill

Examples of Elective Courses of Interest

- VERY flexible
- advisor consultation
- training grant obligations
- (2 electives required)

- CHEM 903 Electrochemistry
- CHEM 917 Statistical Mechanics
- CHEM 916 Molecular Spectroscopy
- BIOL 503 Immunology
- BIOL 672 Gene Expression
- BIOL 688 The Molecular Biology of Cancer
- PHCH 625 Pharmacokinetics
- PHCH 745 Advanced Drug Delivery
- PHCH 801 Issues in Scientific Integrity

Analytical Chemistry Cumulative Exams

- Literature citation announced two weeks prior to the exam date upon which the cumulative exam will be loosely based.
- Study this article and related materials in preparation for the exam.
- You may not bring the article with you to the exam, however, a copy of the paper will be provided for your use during the exam.
- Take advantage of any resources:
 - Study groups
 - Analytical faculty (specific questions).

Examples of Questions

The cumulative exam questions will be aimed at assessing your depth of understanding of the article and, more broadly, on the analytical methodology used.

Sample questions:

1. What problems might be associated with the analysis?
2. How would you obtain a representative sample?
3. Explain the physical properties underlying the instrumental method employed by the authors.
4. Draw a block diagram of the instrument used and explain the function of each component.
5. How well will this method work for the analysis of other compounds?
6. What other analytical methods might have been used to perform this analysis? How do they compare with the method used in the selected citation?

Choosing a Research Advisor

1. Attend research presentations (evenings in mid-September).
2. Obtain Faculty Interview Form and Advisor Selection Form from Sonjia Payne in Chemistry Department Office.

FACULTY INTERVIEW FORM

You are required to speak with a minimum of six faculty members and obtain their signature before submitting your final advisor selection form. Return this form to SONJIA PAYNE in the Chemistry Department Office, November 14, 2005.

GRADUATE FACULTY

Michael Boehm	_____	Raymond Evers	_____
David Brown	_____	Steve East	_____
Frank Brown	_____	Greg Goss	_____
Karen Brummett	_____	Dee Lakin	_____
Tracy Clark	_____	Wesley Matthews	_____
David Clark	_____	Steve May	_____
Wesley Clark	_____	Mark Myers	_____
Michael Clark	_____	Michael O'Neil	_____
Paul Brown	_____	Michael Orban	_____
Joseph Dwyer	_____	Walt Thompson	_____
Tim Feltner	_____	Tim Trapp	_____
Frank Gibson	_____	David Whit	_____
Michael Gibson	_____		

Student's signature: _____

ADVISOR SELECTION FORM

Return this form to SONJIA PAYNE in the Chemistry Department Office, November 14, 2005.

Division of Advising Declaration _____

Faculty Choice

I) _____

II) _____

III) _____

STUDENT'S SIGNATURE _____ DATE _____

3. Visit with at least 6 faculty of your choice and obtain signatures on the Faculty Interview Form.

Choosing a Research Advisor (continued)

4. Visit with the research groups.
5. Submit Faculty Interview Form to Sonjia by November 13, 2009.
6. Return for further discussions with faculty whose projects are of greatest interest.
7. Complete Advisor Selection Form with top three Advisors in order of preference.
8. Turn in completed Advisor Selection Form by December 10, 2009 to Sonjia.

Oral Comprehensive Exam

- Following completion of cumes, FLORS requirements, and ½ hour seminar in Analytical Seminar Series
- Must be passed before 4th year of graduate study
- Two Parts: (1) presentation of your dissertation research, and (2) defense of an independent proposal on a topic unrelated to your research.
- Committee: 4 faculty from Analytical Division, selected by random rotation, and 1 from outside of Chemistry, selected by the 4 department members.

Oral Comprehensive Exam

- Research Presentation Timeline:
 - Should take place before the end of the 5th semester of the doctoral program
 - One week prior to the presentation, you will submit a research abstract, your CV, and your most recent ARTS form to the Division Secretary.
- Proposal Defense Timeline
 - One month prior to the exam date, you will receive a general topic
 - One week prior to exam date, you will submit your written proposal to the Division Secretary for distribution to your committee.
- The exam itself will be divided approximately equally between the proposal and thesis research.

Special Opportunities

- Training Grants
 - Dynamic Aspects of Chemical Biology
 - Pharmaceutical Aspects of Biotechnology
 - <http://www.pharmchem.ku.edu/research-training.php>