University of Maryland Chemistry Coursework: Fall 2015 – Winter 2016

Suggested Coursework for Incoming Chemistry Graduate Students

1) All students must register for 10 credits for Fall 2015. Your TA position provides tuition remission for 10 credits of courses in Fall 2015 and 4 credits in Winter 2016. Typically, an incoming student takes three 3-credit courses and one 1-credit course in the fall semester.

Please note the following courses are mandatory:

2) All students must take Chem 611 – “Professional Skills for New Graduate Students” (1 credit) in Fall 2015. You should register for this course in Fall 2015 or in Winter 2016 if otherwise you would have 11 credits in the Fall 2015.

3) All students must take Chem 612 – “Giving Scientific Presentations” (1 credit) during Winter 2016. Note that in the Winter 2016 semester this class will begin on Jan. 4 (Monday) and will end on Jan. 22 (Friday).

4) Weekly seminars. All students should attend the seminar series (Chem 889) most related to their interests. Students must register for Chem 889 during their 2nd year. Physical Chem/ANE: Wed 11 am; Organic/Inorganic Chem: Thurs 11 am; Departmental Seminars (not every week): Fri 3 pm.

Fall 2015 Courses for Chemistry Graduate Students
See https://ntst.umd.edu/soc/ for details including dates, meeting times and course descriptions.

A. Courses offered by our Department:

CHEM 403 – Radiochemistry (3 credits).
CHEM 460 – Structure Determination Using Spectroscopic Methods (3 credits).
CHEM 601 – Structure and Bonding of Molecules and Materials (3 credits).
CHEM 608K – Chemistry Teaching and Learning in Higher Education (2 credits).
CHEM 611 – Professional Skills for New Graduate Students (1 credit). Required
CHEM 624 – Electrical Methods of Quantitative Analysis (3 credits).
CHEM 625 – Separation Methods in Quantitative Analysis (3 credits).
CHEM 640 – Problems in Organic Reaction Mechanisms (1 credit).
CHEM 641 – Organic Reaction Mechanisms (3 credits).
CHEM 648 – Introduction to Chemical Biology (3 credits)
CHEM 684 – Chemical Thermodynamics (3 credits).
CHEM 690 – Quantum Chemistry (3 credits).
BCHM 661 – Nucleic Acids I (2 credits).
BCHM 662 – Nucleic Acids II (2 credits).
BCHM 671 – Protein Chemistry and Enzymic Catalysis (3 credits).
BCHM 669E – Special Topics: Biomolecular NMR (3 credits).

Note:
- Those who have not taken 2 semesters of undergrad Physical Chemistry may consider Chem 481/482 as an elective.
- Those who have not taken undergrad Biochemistry may consider BCHM 461, 462 or 463 as an elective.
B. Courses offered outside of our Department:

AOSC 620 – Physics and Chemistry of Atmosphere I (3 credits).
AOSC 652 – Analysis Methods in Atmospheric and Oceanic Science (3 credits). This course is most useful for students planning computational research.
ENMA 650– Nanometer Structure of Materials (3 credits). This course is most useful for students planning to conduct research in materials chemistry.

Some typical Fall 2015 Schedules According to Interest Area

Below are typical course schedules for students with research interests in core areas of chemistry.

Analytical / Nuclear / Environmental Chemistry: Students with primary interest in ANE typically take Chem 611 and three courses (3 credits each) from the following list:

- CHEM 611 – Professional Skills for New Graduate Students (1 credit).
- CHEM 624 – Electrical Methods of Quantitative Analysis (3 credits).
- CHEM 625 – Separation Methods of Quantitative Analysis (3 credits).
- CHEM 403 – Radiochemistry (3 credits).
- CHEM 684 – Chemical Thermodynamics (3 credits).
- CHEM 690 – Quantum Chemistry (3 credits).

Other electives from CHEM and BCHM course offerings see on page 1.

Inorganic/Materials Chemistry. Students with interest in Inorganic / Materials Chemistry typically take CHEM 611, CHEM 601 and 2 additional 3-credit courses from the following list:

- CHEM 601 – Structure and Bonding of Molecules and Materials (3 credits).
- CHEM 611 – Professional Skills for New Graduate Students (1 credit).
- CHEM 460 – Structure Determination Using Spectroscopic Methods (3 credits).
- CHEM 625 – Separation Methods of Quantitative Analysis (3 credits).
- CHEM 641 – Organic Reaction Mechanisms (3 credits).
- CHEM 684 – Chemical Thermodynamics (3 credits).
- CHEM 690 – Quantum Chemistry (3 credits).

Other electives from CHEM and BCHM course offerings see on page 1.


- CHEM 611 – Professional Skills for New Graduate Students (1 credit).

  This course is actually taken in Fall 2015, but in order not to exceed 10 credit tuition remission allowed by the Graduate School for the Fall 2015 semester you may need to register for this course in Winter 2016.

- CHEM 640 – Problems in Organic Reaction Mechanisms (1 credit).
- CHEM 641 – Organic Reaction Mechanisms (3 credits).
- CHEM 460 – Structure Determination Using Spectroscopic Methods (3 credits).

Other electives from CHEM and BCHM course offerings see on page 1.
Physical Chemistry. Students with interests in Physical Chemistry typically take Chem 611, Chem 684 and/or Chem 690 and up to two other 3-credit courses.

CHEM 611 – Professional Skills for New Graduate Students (1 credit).
CHEM 684 – Chemical Thermodynamics (3 credits).
CHEM 690 – Quantum Chemistry (3 credits).
Other electives from CHEM and BCHM course offerings see on page 1.