Worksheet for Ph.D. in chemistry (research-based)

A total of 39 credit hours will be required with 12 hours coming from dissertation research credits. An appropriate coursework track will be developed by the student and mentor and approved by the Graduate Program Director. *Note:* a portion of these units are fulfilled by lecture courses and Introduction to Research courses taken as part of the Master's program at SLU.

To be completed PRIOR to transitioning into Ph.D. program

CHEM 5000. All incoming full-time graduate students enroll in our orientation course their starting summer. Those who start in the Spring will take this course during their first summer.

CHEM 5000 Introduction to Chemical Research (1 hr) _____

Core curriculum (12 hrs): A core curriculum consisting of 2 courses from each of the 2 primary focus areas (6 hrs from each area)

1. Synthesis & Materials Chemistry

CHEM 5160 Advanced Synthetic Chemistry (3)
CHEM 5400 Organic Spectroscopy (3)
CHEM 5440 Bioorganic Chemistry (3)
CHEM 5450 Advanced Organic Chemistry (3)
CHEM 5460 Synthetic Organic Chemistry (3)
CHEM 5470 Medicinal Chemistry (3)
CHEM 5480 Heterocyclic Chemistry (3)
CHEM 5500 Inorganic Chemistry (3)
CHEM 5550 Organometallic Chemistry (3)
CHEM 5560 Solid State Chemistry (3)
CHEM 5590 Special Topics - Inorganic (3)
CHEM 5610 Biochemistry 1 (3)
CHEM 5615 Biochemistry 2 (3)
CHEM 5800 Nanomaterials (3)
CHEM 5850 Polymer Chemistry (3)

2. Analytical & Physical Methods.

CHEM 5150 Statistical Methods (3)
CHEM 5170 Advances in Analysis and Modeling of Chemical Systems (3)
CHEM 5200 Analytical Chemistry 2 (3)
CHEM 5230 Mass Spectrometry (3)
CHEM 5250 Bioanalytical Methods (3)
CHEM 5260 Analytical Separations (3)
CHEM 5270 Electroanalytical Chemistry (3)
CHEM 5280 Chemical Sensors (3)
CHEM 5290 Special Topics - Analytical (3)
CHEM 5300 Math Techniques
CHEM 5330 Advanced Physical Chemistry (3)
CHEM 5340 Advanced Thermodynamics (3)
CHEM 5350 Colloids and Interfacial Chem (3)
CHEM 5370 Computational Chemistry (3)
CHEM 5390 Special Topics - Physical (3)
CHEM 5450 Advanced Organic Chemistry (3)
CHEM 5570 Group Theory and Spectroscopy (3)
CHEM 5620 Biophysical Chemistry (3)
CHEM 5630 Chemical Biology and Biotechnology (3)
CHEM 5700 Environmental Chemistry (3)
CHEM 5800 Nanomaterials (3)

List 2 of the courses (course #) you have taken from in the synthesis/materials core:

1) _____ 2) _____ (6 hrs)

List 2 of the courses (course #) you have taken from in the analytical/physical methods core:

1) _____ 2) _____ (6 hrs)

Chemistry Electives: must be 6 hrs or more. List the other chemistry courses you have taken along with the total # of hrs. Most students will take chemistry courses and these must be 5000-level or higher. The electives can also be fulfilled by taking courses in other disciplines such as biology, math/computer science, and engineering. This needs to be approved by the Graduate Program Coordinator.

1) _____ 2) _____ 3) _____ (other classes, if needed)

# of chemistry elective hrs _____ (should be 6 or more hrs)

Introduction to Research. You must take an introductory to research course (3 hrs). Note that this can only be taken once (choose one). It is recommended this course be taken during the first year of graduate studies.

CHEM 5299: Introduction to Analytical Research (3 hrs)
CHEM 5399: Introduction to Physical Research (3 hrs)
CHEM 5499: Introduction to Organic Research (3 hrs)
CHEM 5599: Introduction to Inorganic Research (3 hrs)

List the course you have taken: _____ (can't be more than 3 hrs)

Research Topics: A research topics course must be taken during the summer between the 1st and 2nd year in the program for 3 credit hours.

CHEM 5970 Research Topics (3 hrs) _____ (can't be more than 3 hrs)

<u>To be completed AFTER transitioning into Ph.D. program</u>

Proposal Writing Course: Take one semester of the CHEM 6900 Introduction to Proposal Writing and Oral Presentations (3 credit hours). This should be taken in the first semester of the Ph.D. program.
Semester that CHEM 6900 was taken _____ # hrs _____ (should = 3 hrs)

Dissertation Research (12 hours). You should take 12 hrs of dissertation research (CHEM 6990). These are graded IP (in progress) until your last semester, where an S or U grade is assigned.

Semesters that CHEM 6990 was taken:
1) _____ 2) _____ 3) _____ 4) _____ # hrs _____ (should = 12 hrs)

Total # of hrs _____ (should be 39 or more)