

ERP Course Requirements and Timetable for PhD (recommendations as of July 2012).

Core PhD Requirements A-E = minimum 17 credits (not including ERP Seminar)

- A. 3-4 credits of Statistics
Statistics 541 (3 cr, Fall) or Statistics 571 (4 cr, Fall)
- B. 3 credits in Endocrinology
**Endocrine Physiology, Animal Sciences 875 (3 Cr, Fall)
- C. 9 credits in Biochemistry (PhD) [Take in 2nd year]
 - a. **Biochemistry 507 (3 cr, Fall)
And
 - b. Biochemistry 508 (3 cr, Spring)

3 credits or more in Biochemistry/Cell signaling. [Take in 3rd year]

 - c. **Biochemistry 630 (3 cr, Fall) or Neuroscience 610 (4 cr)

Note: If pre-qualified in Biochemistry, candidate should seek a waiver from 507 and 508 from Program Director. We do not recommend taking course marked ** at the same time.

- D. Professional Development [Take in First Year]
 - * Obstetrics/Gynecology 955 (2 cr. Fall) – **Taught specifically by our program**
- E. ERP Program Seminar (1 cr.). [Take each semester]
 - *Animal Sciences 954, Ob/Gyn 954, Zoology 954

Additional Elective Requirements: to PhD standard as needed *and per committee approval*

- F. Further credits of Relevant more specialized study in Biochemistry, Cell Biology, Endocrinology or Reproduction. Choices will depend on project and career needs, but should be made with the approval of your advisor and committee.
- G. Other – selections as approved per Certification Committee.
 - a. Advanced Statistics – as per project design – eg Stats 572, Stats 542, BMI 511 [consult with your committee and see below].
 - b. Advanced Topics Courses – designed to be at the cutting edge. As advised by committee and of relevance to studies – see below.

MS-PhD Students at the MS stage you could be approved for 501 / 503 or 507/508 in core requirements but any candidate moving onto PhD must then take 507-508 if not already taken.

Required B grade or minimum B average: Faculty approved the B average requirement remain and waived the former required B in core courses. This is to encourage students to take the more difficult courses.

Course substitutions and waivers: Our entering students have diverse backgrounds and career paths so circumstances arise where a course waiver or substitution may be desired. This is indeed possible, but be sure to contact the ERP Director for all waivers and advice on how to proceed.

Footnotes:

Courses for Fall Entry PhD: There are many possible strategies depending on your prior training (See table at end of this section) but we recommend choosing from those marked * or **. You are required to take seminar and professional development. Note that we do not recommend taking more than one course marked ** in a single semester. Course 630 should be taken after 507/508 unless you have a waiver based on prior training. Many students delay Stats 571 to the second year.

Semester	Fall Yr1	Spring Yr 1	Fall Yr 2	Spring Yr2	Yr3 Fall onwards
Courses	<ul style="list-style-type: none">• Endocr Physiol (AnSci 875)• Stats 571• OBGyn 955• 'Seminar' 954	<ul style="list-style-type: none">• Adv Stats• Seminar 954• Adv Topics*• Elective?	<ul style="list-style-type: none">• Biochem 507• Seminar 954• Adv Topics*	<ul style="list-style-type: none">• Biochem 508• Seminar 954• Adv Topics*	Continue in year 3 on to complete <u>630</u> requirement, seminar, and total 2 advanced topics courses

Note: Our illustrations are based on experience. Where indicated *Adv topics- You must take one by ERP itself. Try to take one of ERP's courses in an otherwise light semester with one other major course. Mainly these Adv Topics courses are the ERP875 courses listed on our web site, plus Neuroscience 675 (Spring, odd years). We advise you take heavier advanced course in year 3 to finish.

Notes on Courses from Discussion with Students:

Stats: 571 – Statistical methods for Bioscience I. Useful course either as a 1st time or refresher if already taken for those based on bench research. Recommendation to keep this a required course.

Stats: 572 - Statistical methods for Bioscience II. Advanced Course appears to emphasize agronomy/agriculture examples, students found it hard to relate the course to biomedical research. Recommendation to keep this an option, but also consider 511 or 542 courses in clinical stats to meet requirement.

Stats: 541 – Introduction to Biostatistics. For Biomedical research- handles statistics of relevance to basic/bench laboratory studies. Good alternative to 571.

Stats: 542 – Introduction to Clinical Trials 1. Advanced course based on clinical trials considerations - described as better organized and more relevant to population based clinical trial type research.

BMI: 511 - Introduction to Biostatistics (Pop Health - Optional for Clinicians)

This course covers biostatistical methods for public health practitioners. Topics include research design, data collection methods and database management, statistical computing and programming, descriptive statistics in tables and graphics, and biostatistical methods for summary measures, probability and distributions, sampling distributions, statistical inference, hypothesis testing and statistical comparison, nonparametrics, correlation, regression analysis and survey sampling.

Endocrine Physiology 875: The majority of students are taking this ERP run course since it emphasizes reproduction (as was its intent). Recommendation to keep as a core course and expand it to 6 credits across 2 semesters to encompass the current selected topics (1 semester endocrinology and 1 semester reproduction including more on developmental biology)

Biochemistry 501 and Biomolecular Chemistry 503: Upper level undergraduate courses for MS students only. Material is covered very quickly. Student affairs committee recommends either course as a preparatory course for Biochemistry 507 & 508. Discussion with Students agreed Biochem 501 - 503 was sufficient for those with less training in biochemistry and with less focus on Biochemistry if pursuing a MS only but this would not be sufficient alone for a PhD. Those who can take 507 and 508 without 501-503 should consider doing so first. While such students would get credit for both, only 507 and 508 would meet requirements for PhD.

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Biochemistry 507 & 508: These are intermediate level courses taken by students in several Biosciences training programs. Complete Biochemistry material is spread out into 2 semesters with time to go into greater depth. Students could request a waiver from the Program Director if they can confirm previous courses are equivalent to UW syllabus. Recommend **Biochemistry 630** as an alternative if already have completed 507 & 508 or its equivalent. Recommend **Biochemistry 630** as an advanced course anyway after 507 & 508.

Definition of "Advanced": All students must take at least one advanced or special topics course run by ERP. Beyond that, Dr. Bird indicated that the definition of 'advanced' for other courses is as determined at the thesis committee level based on the individual student's background, research project and career goals. These courses should ideally be determined at the time of certification.

Professional Development: The Endocrinology & Reproductive Physiology Program along with the Molecular and Environmental Toxicology Program and Pharmacology Program have developed a 2 credit course to meet our collective NIH training grant requirements. This course is now offered under **OB/GYN 955**. Students are required to take this course as it will introduce them to a diverse group of faculty and other graduate students from the three collaborating programs.

Elective Courses listed currently in the handbook: There was some confusion over these being a fixed list/limiting students choices, which is not its intent. It was clarified this is simply a list of courses previous students have taken as electives. We can add this information to our web site with comments from previous students about the usefulness of the courses. The bottom line however is electives should be sufficiently challenging for PhD level. Do not choose soft options. They must be approved by your committee.