

**ERP Course Requirements and Timetable for PhD
(recommendations as of Aug 2020).**

A. 4 credits of **Statistics**

Statistics 571 (4 cr, Fall)

(May be substituted with Statistics 541 (3 cr, Fall) with consent of program director or committee)

B. 3 credits in **Endocrinology**

**Reproductive Endocrine Physiology, OBS&GYN 710 (3 Cr, Fall)

C. 6 credits in **Biochemistry** (PhD)

**Biochemistry 501 (3 Cr, Fall, Spring, Summer)

(May be substituted with Biochemistry 507 (3 cr, Fall) & 508 (3 cr, Spring) with no advanced approval)

Then 3 further credits minimum in Biochemistry/Cell signaling.

**Biochemistry 630 (3 cr, Fall) -or- Zoology 570 (3 Cr, Fall) -or- Neuroscience 610 (4 cr, Fall) -or-
Biochemistry 620 (3 Cr, Spring)

D. **Professional Development**

* OBS&GYN 955 (2 cr. Fall) – **Taught specifically by our program**

* OBS&GYN 956 (1 cr. Spring) – **Taken as a dissertator, taught specifically by our program**

E. ERP Program **Seminar** (1 cr.)

*Animal Sciences 954, OBS&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, Reproduction, Methodology/Analysis or Statistics (such as but not limited to Stats 542 or Stats 572). Qualifying courses include high-level undergraduate level courses (500 and above) that cover established knowledge. Choices will depend on project and career needs, but should be made with the approval of your advisor and committee.

G. Advanced Topics Courses – two courses designed to be at the cutting edge. Qualifying courses include graduate-level selected topics and advanced topics courses. As advised by committee and of relevance to studies – see below. One course must be taught by ERP (Medicine 720, OBS&GYN 711, OBS&GYN 712).

990 Research Credits – variable credit per semester as needed to maintain your enrollment status

Required B grade or minimum B average: Faculty have previously 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. Any waiver request needs to demonstrate that a student has achieved equivalent content in a prior course. Any course substitution request must demonstrate that it is relevant to their research and/or career goals, provides instruction at the required level, and achieves the intent of the ERP curriculum.

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 ** above. 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 the Biochemistry 501 requirement (or equivalent) 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 ?= as needed	<ul style="list-style-type: none"> • OBS&GYN 710 • Stats 571 or 541 • OBS&GYN 955 • ERP Seminar 	<ul style="list-style-type: none"> • Biochem 501 • ERP Seminar • Medicine 720 or Elective? 	<ul style="list-style-type: none"> • Biochem 630 • ERP Seminar • Adv Topics* 	<ul style="list-style-type: none"> • Adv Stats ? • ERP Seminar • Adv Topics • Elective ? 	<ul style="list-style-type: none"> • ERP Seminar • Adv topics ? • Elective?

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. We advise you take heavier advanced elective course separate from major required courses (ie 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. Recent revisions have made this course more comprehensive than 571; with prior permission from the program director, students completing 541 can go on to fulfill the advanced statistics requirement through targeted instruction, including workshops/seminars/auditing a course.

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. Students cannot take both 541 and BMI 511.

OBS&GYN: 710 – Reproductive Endocrine Physiology: This course used to be Endocrine Physiology 875, which was broken up and developed into two separate courses to meet program interests and needs. Reproductive Endocrine Physiology is a core course with emphasis on endocrinology and reproduction and is a required course (Section B).

Medicine: 720 – Endocrinology and Metabolism. This is a new general endocrine course primarily focused on the endocrine systems of the Dept Medicine (ie, focused on diabetes, metabolism, etc). It is complementary to 710, completing the entire range of endocrine physiology systems. This course is an Elective course (Section H).

Biochemistry 501 or Biomolecular Chemistry 503: Upper level undergraduate courses. Material is covered very quickly. Discussion with Students agreed Biochem 501 - 503 was sufficient for those with less training in biochemistry and with less focus on Biochemistry in their project. Students could request a waiver from the Program Director if they can confirm previous courses are equivalent to UW syllabus.

Biochemistry 507 & 508: For those wanting to go deeper into Biochemistry, 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. These two courses can serve as a substitute for Biochemistry 501.

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 also be approved by your committee.