Syllabus – Endocrinology (Bio 110)  
Fall 2019

Instructor:  Professor L. Michael Romero  
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Office Hours:  Wednesdays 2:00-3:30  
Office: Robinson 361  
Or by Appointment (email is usually better)

Teaching Assoc:  Brenna Gormally  
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Office Hours:  Mon & Wed 9:30-10:30  
Robinson 350

Meeting Time:  Block E+ (Mon and Wed 10:30-11:45) in Anderson 206


Grading:  
2 Midterm Exams = 60% (30% Each)  
Poster Presentation = 30%  
Poster Critiques = 6%  
Exams will not be cumulative (although mastery of basic concepts will be assumed) and the poster will serve as the final. Test information will come mostly from class, but information in the text related to class presentations is fair game.

Seminar = 4%  
The Biology Department hosts a seminar from 4:00-5:00 every Friday afternoon in Robinson 253. You will be required to attend two of these lectures during the semester – which ones entirely up to you. Attendance will not be graded, but each seminar attendance is worth 2%. An email should be sent to me after each seminar you attend with 1 sentence on what the seminar was about, and 1 sentence on something you found interesting, surprising, or confusing. I especially recommend the lecture by Prof. Heidinger on Nov. 15. If you have a conflict with the Biology seminar time, then you can attend either the Chemistry Department lectures (normally Tuesdays at 4:30, but check beforehand), Chemical and Biological Engineering department (normally Mondays at noon, but check beforehand), or Environmental Studies Lunch-and-Learn (on Thursdays at noon) and send the same 2 sentences. However, these alternative lectures will likely be less connected to endocrinology.

The Blog:  This semester, Jessica Wright-Lichter, a graduate student in my laboratory, will be posting a weekly blog about her research. This is required reading. The blog will culminate in a short lecture near the end of the semester, and there will be a question about the blog on the exam.
Daily Topics:

1. Sept. 4 General Principles of Endocrinology
   What are hormones, types of release, homeostasis and feedback, causative vs. permissive, organizational vs. activational
   Reading: pg. 1-15,

2. Sept. 9 Techniques for Studying Endocrinology
   Rhythms, Extirpation/replacement, RIA, etc.
   Reading: pg. 23-32

3. Sept. 11 Finish Techniques: Scatchard Analysis
   Reading: pg. 32-39
   General Principles of Endocrinology – Peptide Hormones
   Reading: pg. 43-48

4. Sept. 16 General Principles of Endocrinology
   Peptide Hormone Receptors, Steroids, and prostaglandins
   Reading: pg. 48-80 and; 85-88

5. Sept. 18 The Hypothalamic-Pituitary System I
   Anatomy, Tropic Hormones
   Reading: pg. 93-109

6. Sept. 23 The Hypothalamic-Pituitary System II
   Tropic hormone regulation: TRH, GnRH, & Prolactin
   Reading: pg. 109-126

7. Sept. 25 The Hypothalamic-Pituitary System III
   Tropic hormone regulation: ACTH & GH
   Reading: pg. 126-133

8. Sept. 30 The Hypothalamic-Pituitary System IV
   Vasopressin, Oxytocin, & Melatonin
   Reading: pg. 133-146

9. Oct. 2 Thyroid Hormones I
   Biochemistry and Mechanisms of Action
   Reading: pg. 80-85; 207-217

10. Oct. 7 Thyroid Hormones II
    Biological functions
    Reading: pg. 217-218; 221-228; 248-250
    Catch Up from first 9 lectures

11. Oct. 9 Exam Review
13. Oct. 15 1st Midterm
    Spermatogenesis, Testicular function
    Reading: pg. 333-339

15. Oct. 21 Reproduction II – Females
    Ovarian cycles, Pregnancy, Lactation
    Reading: pg. 329-333; 339-357

    Vitellogenesis, Sex determination, Clinical Diseases
    Reading: pg. 319-323; 365-370; 375-377; 379-383

17. Oct. 28 Reproduction IV: Seasonal Breeding
    Metabolism I – The Endocrine Pancreas
    Pancreatic Anatomy, Insulin and Glucagon
    Reading: pg. 463-472

18. Hormone chosen for final project

19. Oct. 30 Metabolism II – Pancretic Functions
Metabolism, Gluconeogenesis, Diabetes, Feeding
Reading: pg. 474-477; 563-570
18. Nov. 4 Gastrointestinal Hormones
Pepsin, Gastrin, Secretin, and Cholecystokinin
Reading: pg. 449-463
19. Nov. 6 Calcium and Phosphate Homeostasis
Parathyroid hormone, Calcitonin
Reading: pg. 501-516
Nov. 11 Veteran’s Day – No Class
20. Nov. 13 Adrenal Steroids
Adrenal anatomy, Aldosterone, Adrenal Medulla
Reading: pg. 41-42; 261-264; 273-279; 282-287
Summary due for final project
Nov. 15 Lecture by Dr. Heidinger
21. Nov. 18 Stress I
Glucocorticoids and Catecholamines
Reading: pg. 264-273; 280-282; 472-474
22. Nov. 20 Stress II
23. Nov. 25 2nd Midterm
- Nov. 27 Thanksgiving Break – No Class Project: Self-study on how excessive eating alters hormone release
24. Dec. 2 Field Endocrinology
25. Dec. 4 All Posters Due Poster Presentations – Group 1
26. Dec. 9 Poster Presentations – Group 2