# SYLLABUS

**Quarter:** Winter 2015

**Name of Course:** Pathology Lab (PATH – 227/727)

**Length of Course:** 2.5 units, 33 hours (2 hours lecture, 1 hour lab/week)

**Course Description:** The students are provided an opportunity to visualize the gross anatomical nature of the pathological conditions which have been explained in the combined physio-path course series. This is a problem -based learning class designed to provide a review of pathophysiology and orient the student to the clinical relevance of common pathological conditions.

**Prerequisites:** ANAT-219, PATH-120, PhPa-212, PhPa-225

**Course Offered By:** Basic Science Department
Suzanne L. Ray, M.S. Department Chair

**Course Instructor:** Sue Ray, M.S.

Phone: 510-780-4500 ext. 2135
Email: sray@lifewest.edu

Room: 134

**Office Hours:** Mon 11:40-12:40 and Wed. 11:40-12:40 Other times by appointment

Required Texts: NONE

Required Reading: Balon, Jeffrey, et al. A comparison of active and simulated chiropractic manipulation as adjunctive treatment for childhood asthma. New England Journal of Medicine 1998;339:1013-1020.

Reference Text: Kasper DL Harrison's Principles of Internal Medicine. 16th ed. 2005
Beer MH Merck Manual of Diagnosis and Therapy. 18th ed. 2006
Kumar V Robbins & Cotran Pathologic Basis of Disease. 8th ed. 2010

**Materials:** Handouts will be provided by the instructor.

**Method of Instruction:** Some brief review lecture/demonstration
Students are given activities to answer/turn in during class
Students will work with lab reports, Xrays, cases, preserved specimens and current literature

**Request for Special Testing**: Not applicable

**Accommodations for Students with Disabilities:** If you have approved accommodations, please make an appointment to meet with your instructor as soon as possible. If you believe you require an accommodation, but do not have an approved accommodation letter, please see the Academic Counselor Lori Pino in the Deans Office. Contact info: Lpino@lifewest.edu or 510-780-4500 ext. 2061.

**Grades and Method of Grading:** The student will submit an assignment for grade during each lab period. Each will offer the student the opportunity to think critically and apply basic science to the clinical setting. Organization, analysis, comparisons and contrasts, judgments and other skills preparing for diagnosis are being cultivated by these exercises. Therefore, the points awarded will require that the student clearly demonstrate that each has done his/her own work/ thinking. Any papers which are too similar to each other will be awarded only a fraction of the total points possible. A student receiving less than 70% is allowed to redo/correct, and a new grade will result from the average. These corrections are due one week after they are returned.

If a student is absent for a problem solving assignment it is his/her responsibility to prepare this for submission by the following class meeting or a grade of 0 will be awarded. If the student gets the assignment and submits it prior to the review of final answers, they may still obtain full credit.

**There Is No Final Exam**

The **final grade** will be determined by the following scale:

A 4.0 90 - 100% B 3.0 80 - 89% C 2.0 70 - 79% F 0.0 <70% Failure – The student must repeat the entire course.

**Conduct and Responsibilities:** See college policy

The use of electronic devices (e.g. cell phones, laptops) for non-course activities is unprofessional behavior. Students will be penalized for such activities which can include loss of attendance credit for the course hour. Course related use of electronic devices during class time requires prior instructor's approval.

**Attendance:** Roll will be taken by the submission of answers to the questions/ problems generated during each class session. In the event a student is absent from an afternoon lab problem solving –assignment and turns in the assignment prior to review of the answers (during the first hour of the next class meeting), full credit will be awarded. Late assignments will incur substantial penalty, (10% for non-specimen labs and 50% for specimen – related assignments.)

**Extra Credit:** There will be no extra credit work accepted in this class.

**Independent Student Work:** All submitted work must ultimately be the product of the individual student's own efforts to solve the various "problems" posed in class. Collaboration on the assignments is encouraged, but the student must attempt to express the concepts in their own words..

**Procedures for Reviewing Exams** – N/A

**Course Goals:** The purpose of this class is to integrate pathology information in a problem-based format and to foster the development of critical thinking.

**Course Objectives:**

Week 1: Review inflammation - Hemodynamics

- infection, inflammation, immunity, injury, and innate
- the inflammatory response – cardinal signs
- the exudates and edema

Lab: P.S. #1: working the acute inflammatory response

Week 2: Review WBC's and their role in immunity and inflammation

- acute vs. chronic shifts in the differential
- NLMEB

Lab: PS #2 The CBC and Differential

Week 3: Review Chronic Inflammation, healing, and repair

- $1^{st}$ and $2^{nd}$ intention healing – wound repair with DVD
- Granulomatous inflammation
- necrosis
- dystrophic calcification
- factors influencing outcomes

Lab: P.S. #3 show specimens of chronic injury and discuss how proper clinical management prevents adverse healing outcomes

Week 4: Begin Intensive Immunology Review

- Lymphocytes – adaptive immunity with specificity and memory
- T cells – cell mediated immunity
- the major histocompatibility complex, CD4+, CD8+
- helper subtypes, dendritic /antigen presenting cells and interleukins

Lab : P.S. #4- Thymus dependencies in a case of Di George's syndrome

Week 5: Continue Immunology Review

- B cells – humoral or chemically mediated immunity
- Antibody actions
- Antibody classes

Lab: sample National Board questions = P.S. #5

Week 6: Review Hypersensitivity

- Type I = Immediate
- Type II=antibody mediated
- Type III= complex mediated
- Type IV=delayed

P.S. #6- Extrinsic asthma and its relationship to allergies

Week 7: Finish hypersensitivity with clinical cases

Lab: Review Arthritis with a Differential Approach (compare and contrast)

P.S. # 7 specimens of DJD vs. R.A. vs. Gout

Week 8: Review tumors (handout)

- alterations of cell growth - slides
- adaptive growth vs. pathology
- compare hypertrophy, hyperplasia, atrophy
- compare metaplasia, dysplasia, and anaplasia
- grading and staging

Lab: P.S. #8 compare cysts to benign, and malignant tumors

Week 9: Continue neoplastic transformation –

- nomenclature
- epidemiology
- Lab: P.S. #9–specimens with specific common cancers

Week 10: Finish oncology

Lab: observation of systems pathology – Pathology's greatest hits

***NO FINAL EXAM***

**STUDENT LEARNING OUTCOMES FOR PATHOLOGY LAB**

**THE STUDENT SHOULD BE ABLE TO:**

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|---|---|
| Week 1: | Explain the difference between injury, infection, inflammation, immunity, and innate and apply the concepts of acute inflammation to a clinical case |
| Week 2: | Apply a knowledge of WBC function to the interpretation of a lab differential |
| Week 3: | Demonstrate an understanding of chronic inflammation from laboratory specimens and x-ray. |
| Week 4: | Read and interpret a clinical case of cell mediated immunodeficiency. |
| Week 5: | Answer a battery of review questions on immunopathology in the National Board format. |
| | Discuss the normal mechanisms of cell and humoral immunity and be conversant in issues related to immunization. |
| Week 6: | Read and interpret a clinical case of immediate hypersensitivity/bronchial asthma |
| Week 7: | Perform an arthritis differential from X-rays, specimens, and labs. |
| Week 8: | Master the basic terminology of space occupying lesions comparing cysts, celes, and tumors. |
| | Demonstrate an understanding of the differences between benign and malignant tumors. |
| Week9: | Match characteristics of specific tumors with viewed specimens. |
| | Understand the difference between staging and grading of tumors. |
| Week 10: conditions | Enjoy a viewing of Pathology's Greatest Hits showing common disease |

**Summary Outcome:**

By doing the weekly written assignments, the student becomes better able to integrate and analyze information related to the basic science coursework and is better prepared for the clinical experience