**PTH - PATHOLOGY**

**PTH 7000 General Pathology Cr. 5**  
The structural and functional manifestations of disease. Concepts of biochemistry, physiology and cell biology are utilized in developing a dynamic approach to the study of the abnormal cell and its constituents. Basic mechanisms are stressed. Offered Fall.  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7080 Special Topics in Pathology Cr. 1-15**  
Frontier areas in experimental pathology and clinical laboratory sciences. Format may be lecture, laboratory, or discussion; topics to be announced in Schedule of Classes. Offered Every Term.  
**Restriction(s):** Enrollment is limited to Graduate level students.  
**Repeatable for 20 Credits**

**PTH 7085 Critical Review of Scientific Publications Cr. 1**  
For Ph.D. students in biomedical fields. Current experimental approaches in medical research. Offered Every Term.  
**Restriction(s):** Enrollment is limited to students with a major in Pathology, enrollment limited to students in the PhD in Medicine program, enrollment is limited to Graduate level students.  
**Repeatable for 5 Credits**

**PTH 7090 Signal Transduction and Cell Growth Regulation Cr. 3**  
Signal transduction pathways, both cellular and molecular, and their alterations in cancer. Journal articles and instructor handouts used; emphasis on relationship to disease process. Offered Biannually (Winter).  
**Prerequisites:** (IBS 7010 with a minimum grade of C or IBS 7020 with a minimum grade of C) AND (IBS 7015 with a minimum grade of C)  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7130 Neuropathology Cr. 2**  
Offered Yearly.  
**Prerequisites:** PTH 7000 with a minimum grade of C  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7150 Pathology of Respiratory Tract Cr. 2**  
Offered Yearly.  
**Prerequisites:** PTH 7000 with a minimum grade of C  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7180 Cardiovascular Pathology Cr. 2**  
Gross, microscopic and submicroscopic anatomy and pathophysiology of cardiovascular disease, both human and experimental. Offered Yearly.  
**Prerequisites:** PTH 7000 with a minimum grade of C  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7330 Pathology of the Kidney Cr. 2**  
Techniques of preparing renal biopsies for light and electron microscopy and immunofluorescent studies; ultrastructure of normal kidney; physiology of kidney - acute and chronic renal failure; glomerular disease; pyelonephritis; vascular disease; and acute tubular necrosis and renal transplantation. Offered Yearly.  
**Prerequisites:** PTH 7000 with a minimum grade of C  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 7500 Systemic Pathophysiology Cr. 3**  
Pathology and pathogenesis underlying abnormal physiologic function of major organ systems in humans. Offered Yearly.  
**Prerequisite:** PSL 7010, with a minimum grade of C; BCH 7010, with a minimum grade of C  
**Restriction(s):** Enrollment is limited to Graduate level students.  
**Course Material Fees:** $25

**PTH 7890 Seminar Cr. 1**  
Offered Yearly.  
**Restriction(s):** Enrollment is limited to students with a major in Pathology, enrollment is limited to Graduate level students, enrollment limited to students in a Doctor of Philosophy degree.

**PTH 7990 Directed Study in Clinical Pathology and Pathologic Anatomy Cr. 2**  
Offered Yearly.  
**Restriction(s):** Enrollment is limited to students with a major in Pathology, enrollment limited to students in the PhD in Medicine program, enrollment is limited to Graduate level students.  
**Repeatable for 12 Credits**

**PTH 8000 Current Topics in Tumor Metastasis Cr. 3**  
Advances in research on key aspects of tumor metastasis; emphasis on molecular mechanisms, tumor invasion, angiogenesis, and organ-specific tumor metastasis. Offered Fall.  
**Prerequisites:** (IBS 7010 with a minimum grade of C or IBS 7020 with a minimum grade of C) AND (IBS 7015 with a minimum grade of C)  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 8010 Molecular Biology of Diabetes and Obesity Cr. 2**  
Basic principles and current research topics in the etiology and pathology of diabetes; diabetic complications and obesity. Offered Biannually (Fall).  
**Prerequisites:** (IBS 7010 with a minimum grade of C or IBS 7020 with a minimum grade of C) AND (IBS 7015 with a minimum grade of C)  
**Restriction(s):** Enrollment limited to students with a class of Applicant Masters, Candidate Masters or Doctoral Candidate, enrollment is limited to Graduate level students.

**PTH 9990 Pre-Doctoral Candidacy Research Cr. 1-8**  
**Restriction(s):** Enrollment is limited to Graduate level students.  
**Repeatable for 12 Credits**

**PTH 9991 Doctoral Candidate Status I: Dissertation Research and Direction Cr. 7.5**  
Offered Yearly.  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 9992 Doctoral Candidate Status II: Dissertation Research and Direction Cr. 7.5**  
Offered Yearly.  
**Prerequisite:** PTH 9991, with a minimum grade of S  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 9993 Doctoral Candidate Status III: Dissertation Research and Direction Cr. 7.5**  
Offered Yearly.  
**Prerequisite:** PTH 9992, with a minimum grade of S  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 9994 Doctoral Candidate Status IV: Dissertation Research and Direction Cr. 7.5**  
Offered Yearly.  
**Prerequisite:** PTH 9993, with a minimum grade of S  
**Restriction(s):** Enrollment is limited to Graduate level students.

**PTH 9995 Candidate Maintenance Status: Doctoral Dissertation Research and Direction Cr. 0**  
Offered Yearly.  
**Restriction(s):** Enrollment is limited to Graduate level students.  
**Repeatable for 0 Credits**
PTH 9999 Doct Diss Rsch&Dir Cr. 1-16
Offered Yearly.
Restriction(s): Enrollment limited to students with a class of Doctoral Candidate, enrollment is limited to Graduate level students.