PHYB 531. Metabolism: An Integrated Multi-Organ Crosstalk. 3 hours.
Mechanisms of tissue inflammation and repair in various tissues and
different pathological conditions. This course will focus on current
research related to factors influencing inflammation and tissue repair
including the effects of exercise. Course Information: Previously listed as
PHYB 523. Prerequisite(s): Consent of the instructor.

PHYB 540. Ion Channels: Structure, Function, Pharmacology and
Pathology. 2 hours.
The concept of ion channels is treated from the perspectives of their
molecular structures and functions. Modulation, pathological conditions
(channelopathies), and pharmacological intervention will also be treated.
Course Information: Same as PCOL 540. Recommended background:
One undergraduate course in biochemistry and one in physiology, or
consent of the instructor.

PHYB 551. Human Physiology I. 5 hours.
Lectures and conferences in human physiology. Emphasis is on cellular,
nerve-muscle, cardiovascular, respiratory and renal physiology. Course
Information: Prerequisite(s): Mathematics, undergraduate physics, and
organic chemistry; or consent of instructor. Recommended background:
Course work in biological sciences. Class Schedule Information: To be
properly registered, students must enroll in one Conference and one
Lecture.

PHYB 552. Human Physiology II. 5 hours.
Lectures and conferences in human physiology. Continuation of PHYB
551 Human Physiology II. Emphasis is on central nervous, endocrine and
reproductive systems physiology. Course Information: Prerequisite(s):
PHYB 551. Recommended background: Course work in biological
sciences.

PHYB 561. Introduction to the Biopharmaceutical Industry, Including
Leadership and Communication Skills. 4 hours.
Designed for the students to gain an understanding of the organization,
operations, and business model, past, present and future of the
biopharmaceutical industry, both large pharma, start-ups and those
companies in between. Course Information: Prerequisite(s): Enrolled
in the Master of Physiology for Therapeutic Development program or
consent of the instructor. Recommended background: A Bachelor of
Science degree in Biology or related field.

PHYB 562. Therapeutic Development – Clinical Trials. 3 hours.
Students will understand how clinical trials are designed and conducted
during drug development. Topics will include clinical trial designs
for phases 1-4, randomization principles and procedures, analysis
of pharmacokinetic data for bioequivalence. Course Information:
Prerequisite(s): Consent of the instructor. Recommended background: All
students must have a Bachelor of Science in Biology or related field.

PHYB 563. Bioinformatics, Biostatistics and Epidemiology. 3 hours.
Provides students with the operational knowledge and vocabulary
to facilitate discussions with others regarding these interdisciplinary
subjects. Course Information: Prerequisite(s): Enrolled in the Master
of Physiology for Therapeutic Development program or consent of the
instructor. Recommended background: A Bachelor of Science degree in
Biology or related field.

PHYB 564. Introduction to Regulatory and Medical Affairs with Peri/
Post Approval Processes. 4 hours.
Designed for the students to gain an understanding of the various roles
in regulatory affairs and FDA drug regulations. Course Information:
Prerequisite(s): Enrolled in the Master of Physiology for Therapeutic
Development program or consent of the instructor. Recommended
background: A Bachelor of Science degree in Biology or related field.
PHYB 565. Seminar in Pharmaceutical Operations. 2 hours.
Students will gain operating knowledge of the workings of a pharmaceutical company. Topics will include career opportunities. Course Information: Prerequisite(s): Enrolled in the Master of Physiology for Therapeutic Development program or consent of the instructor. Recommended background: A Bachelor of Science degree in Biology or related field.

PHYB 569. Methods in Experimental Physiology. 3 hours.
Primarily for students in physiology. Registration limited to eight. A laboratory course designed to acquaint students with advanced techniques and methodology in physiologic investigations. Course Information: Prerequisite(s): Enrollment in the M.S. or Ph.D. in Physiology and Biophysics program, and credit or concurrent registration in PHYB 401 or the equivalent; or consent of the instructor.

PHYB 571. Clinical Applications of Physiology I. 2 hours.
Students in this course will apply principles of basic physiology to select topics in state of the art science affecting both clinical issues and research designed to address these issues. Course Information:.

PHYB 572. Clinical Applications of Physiology II. 2 hours.
Students in this course will apply principles of basic physiology to select topics in state of the art science affecting both clinical issues and research designed to address these issues. Course Information: Prerequisite(s): Mathematics, undergraduate physics, and organic chemistry; or consent of instructor. Recommended background: Extensive course work in undergraduate sciences, particularly biological sciences. Corequisites: Requires concurrent registration in PHYB 552.

PHYB 585. Cell Biology. 4 hours.
Functional and structural organization of the cell with emphasis on the cellular basis of physiological activity. Course Information: Same as ANAT 585 and MIM 585.

PHYB 586. Cell Physiology. 3 hours.
Advanced functional and structural organization of the cell with emphasis on the cellular basis of physiological activity. Course Information: Prerequisite(s): PHYB 552 and GCLS 501 and GCLS 503; or consent of the instructor.

PHYB 590. Seminar in Cardiovascular Science. 1 hour.
Weekly seminars on advanced cardiovascular science topics by staff and invited speakers. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): Consent from the course coordinator. Enrollment is open to students following completion of their first year of graduate studies.

PHYB 591. Departmental Seminar. 1 hour.
Weekly seminar by staff and invited speakers. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Required of all physiology and biophysics students each fall and spring semester while enrolled in the graduate program. Prerequisite(s): Graduate or professional standing.

PHYB 592. Experimental and Diagnostic Methods in Cardiovascular Science. 3 hours.
Establishes the fundamental physical basis between diagnostic and experimental procedures in the clinic and basic science laboratory, combined with some direct observation of methods used for experimental approaches. Course Information: Prerequisite(s): GCLS 500 and either GCLS 501 or GCLS 502 or GCLS 503; or consent of the course coordinator.

PHYB 594. Special Topics in Physiology and Biophysics. 1-4 hours.
Topics may include bioengineering, endocrinology, membrane biology, ion transport and its regulation, muscle physiology, neurophysiology, molecular neurobiology and others of current significance in physiology and biophysics. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Consent of the instructor.

PHYB 595. Journal Club and Seminar in Physiology. 1 hour.
Student presentation and discussion of assigned topics of current importance in physiology and biophysics as well as related fields. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): Consent of the instructor. Limited to degree candidates in physiology and biophysics.

PHYB 596. Independent Study. 1-4 hours.
Individual study guided by a faculty member. The format of the course, examination and grading to be established by the faculty member. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Consent of the instructor.

PHYB 598. M.S. Thesis Research. 0-16 hours.
Thesis work under the supervision of a graduate adviser. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): Graduate standing in physiology and biophysics.

PHYB 599. Ph.D. Thesis Research. 0-16 hours.
Thesis work under the supervision of a graduate adviser. Course Information: Satisfactory/Unsatisfactory grading only.