PHYSICAL THERAPY AND
CLINICAL LABORATORY
SCIENCE

College of Health and Social Sciences
Dean: Alvin Alvarez

Physical Therapy Program
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Clinical Laboratory Science Internship Program
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Website: cls.sfsu.edu (http://cls.sfsu.edu)

Program Director: Susan Kazarian

Program
The Physical Therapy degree is offered jointly with the University of California, San Francisco.

Professors
Allen, Byl, Hallum, Noble, Radtka, Topp, Wanek

Associate Professors
Jaramillo, Lui, Rosi, Souza

Assistant Professors
Lee, Fitzsimmons

Associate Clinical Professor
Pawlowsky

Assistant Clinical Professors (UCSF/SF State)
DaPrato, Pitsch, Scheid, Smoot

Lecturers
Andrade, Brand-Perez, Carlisle, Holland, Hutto, Ide-Don, Leff, McCarthy, Scalise, Sokolski

Clinical Laboratory Science Internship Program
Lecturers
Kazarian, Silverman, Coleman, Kouyoumdjian, Nusrat, Low

Doctorate
• Doctor of Physical Therapy (bulletin.sfsu.edu/colleges/health-social-sciences/physical-therapy-clinical-laboratory-science/doctor-of-physical-therapy)

Certificate
• Graduate Certificate in Clinical Laboratory Science (bulletin.sfsu.edu/colleges/health-social-sciences/physical-therapy-clinical-laboratory-science/graduate-certificate-clinical-laboratory-science)

Physical Therapy
PT 700 Multisystem Pathokinesiology (Units: 4)
Prerequisites: Restricted to graduate Physical Therapy students; PT 201, PT 202, PATH 135.
An integrated approach to the pathological, anatomical, evaluation, treatment and management considerations related to patients with multisystem dysfunctions, with a focus on physical therapy practice in the acute care environment. Long-term management, adaptive equipment/procedures, and preventative aspects of care are also discussed. Classwork, 2 units; laboratory, 2 units. (Plus-minus letter grade; no CR/NC allowed; RP)

PT 704 Education, Health Promotion, Wellness, and Prevention in Physical Therapy (Units: 2)
Prerequisite: Restricted to graduate Physical Therapy students.
Principles of communication, learning, and memory affecting physical therapists’ roles as an educator in individualized patient and caregiver instruction, staff development programs, community health, wellness, and prevention programs. (Plus-minus letter grade; no CR/NC allowed; RP)

PT 705 Administration and Organization in Physical Therapy (Units: 2)
Prerequisite: Restricted to graduate Physical Therapy students.
Specific administrative and planning skills required for physical therapy practice in various settings. Quality assurance, documentation, personnel and fiscal management, planning, contracting, health services administration, health care team, professional and medical-legal issues. (Plus-minus letter grade only)

PT 706 Structure, Function and Motion in Physical Therapy (Units: 2)
Prerequisite: Admission into the MS-DPT program.
Combine knowledge of human anatomy with basic structural and kinesiological principles to understand normal functional motion of the spine, trunk, and extremities in preparation for the analysis of abnormal human motion in the Neuromusculoskeletal Pathokinesiology PT course series. Classwork, 1 unit; laboratory, 1 unit. (Plus-minus letter grade only)

PT 710 Neurological Pathokinesiology I (Units: 4)
Prerequisite: Restricted to graduate Physical Therapy students.
Pathokinesiological and neuromotor principles applied to physical therapy assessment and intervention for neurological dysfunction; physical rehabilitation of adults with neurological impairments, limitations, and disability from trauma, tumors, vascular problems, infectious or degenerative diseases. Classwork, 2 units; laboratory, 2 units. (Plus-minus letter grade only)
PT 711 Neurological Pathokinesiology II (Units: 3)
Prerequisites: Restricted to graduate Physical Therapy students; PT 710.
Pathokinesiological and neuromotor principles applied to examination, evaluation, diagnosis, prognosis, plan of care and intervention of neurological dysfunction in pediatric patients. Includes dysfunction from trauma, congenital defects, and degenerative diseases. Classwork, 2 units; laboratory, 1 unit. (Plus-minus letter grade only)

PT 720 Cardiopulmonary Pathokinesiology I (Units: 2)
Prerequisite: Restricted to graduate Physical Therapy students.
Assessment and treatment of kinesiological/physiological dysfunction of cardiac and pulmonary systems. Physical rehabilitation or training for cardiac and/or pulmonary limitations arising from trauma, disease, congenital defect, or lifestyle. Classwork, 1 unit; laboratory, 1 unit. (Plus-minus letter grade only)

PT 735 Psychosocial Issues in Rehabilitation Sciences, Part I (Units: 2)
Prerequisite: Restricted to graduate Physical Therapy students.
Exploration of one's individual biases, values, and judgments of psychosocial factors that influence patient and physical therapist interactions; identifying key psychosocial issues and providing intervention and support services where appropriate. (Plus-minus letter grade only)

PT 736 Ecological and Organizational Issues in Rehabilitation (Units: 3)
Prerequisite: Restricted to graduate Physical Therapy students.
Cultural, environmental, and legislative issues affecting accessibility of physical therapy and related services. Sociocultural issues relative to quality of health as a right; influences of political and fiscal climates on trends in models of health care delivery. (Plus-minus letter grade only)

PT 737 Psychosocial Issues in Rehabilitation Science, Part II (Unit: 1)
Prerequisite: Restricted to graduate Physical Therapy students.
Exploration of one's individual biases, values, and judgments of psychosocial factors that influence patient and physical therapist interactions; identifying key psychosocial issues and providing intervention and support services where appropriate. (Plus-minus letter grade only)

PT 741 Musculoskeletal Pathokinesiology I (Units: 4)
Prerequisites: Restricted to graduate Physical Therapy students; PT 200, PT 201, PT 706.
Surface anatomy, basic structure, biomechanical principles applied to the understanding of normal and abnormal human motion in the lower extremities and to the analysis of physical function. Examination, evaluation, treatment skills for musculoskeletal disorders. Classwork, 2 units; laboratory, 2 units. (Plus-minus letter grade only)

PT 742 Musculoskeletal Pathokinesiology II (Units: 4)
Prerequisites: Restricted to graduate Physical Therapy students; PT 741.
Surface anatomy, basic structure, biomechanical principles applied to the analysis of normal/ abnormal human motion, and physical function in the spine, pelvis, upper extremities. Examination, evaluation, and treatment skills for musculoskeletal disorders. Classwork, 2 units; laboratory, 2 units. (Plus-minus letter grade only)

PT 743 Musculoskeletal Pathokinesiology III (Units: 3)
Prerequisites: Restricted to graduate Physical Therapy students; PT 741, PT 742.
Assessment and therapeutic techniques in management of complex patients with musculoskeletal problems. Evaluation and application of research. Problem-solving. Patient presentation; evaluation of new techniques. Classwork, 2 units; laboratory, 1 unit. (Plus-minus letter grade only)

PT 801 Clinical Clerkship I (Units: 6)
Prerequisites: Restricted to graduate Physical Therapy students; successful completion of year 1 coursework with minimum GPA of 3.0; full-time 8 week clinical affiliation.
Students participate in patient care, attend clinic meetings and seminars, present an in-service, write personal clinical goals, and reflections. (CR/NC only, RP)

PT 802 Clinical Clerkship II (Units: 6)
Prerequisites: Restricted to graduate students in Physical Therapy; successful completion of year 2 coursework with minimum GPA of 3.0; full-time 8 week clinical affiliation.
Students participate in patient care, attend clinic meetings and seminars, present an in-service, submit case reports, and write personal clinical goals, and reflections. (CR/NC only, RP)

PT 803 Clinical Clerkship III (Units: 6)
Prerequisites: Restricted to graduate Physical Therapy students; successful completion of year 2 coursework with minimum GPA of 3.0.
Full-time 8 week clinical affiliation. Students participate in patient care, attend clinic meetings and seminars, present an in-service, submit case reports, and write personal clinical goals, and reflections. (CR/NC only, RP)

PT 890 Research Seminar in Physical Therapy (Units: 3)
Prerequisites: Restricted to graduate Physical Therapy students; PT 253.
Research designs, problem-solving, methodologies, and data analysis for specific topics in basic and clinical physical therapy research. Implementation of one facet of an on-going project, under guidance of the principal investigator. (CR/NC only)

PT 899 Independent Study (Units: 1-3)
Prerequisites: Restricted to graduate students in Physical Therapy; consent of major adviser and supervising faculty member.
Independent study or research planned, developed, and completed under the direction of a faculty member. Open only to graduate students who have demonstrated ability to do independent work. May be repeated for a total of 6 units.

PT 908 Professional Colloquium (Unit: 1)
Prerequisites: Admission to DPT program and PT 208 (UCSF).
Topics relative to evidence based PT practice: ethics, human subjects, research, authorship, scientific writing; and to professional issues: legislation, direct access to PT services, and reimbursement for services. (Plus-minus letter grade only)
PT 910 Evidence Based Practice (Units: 4)
Prerequisites: Restricted to graduate Physical Therapy students; successful completion of PT 209 or the equivalent; or consent of instructor.

Students will continue the evidence-based review they started in PT 209, performing a meta analysis to answer their own research question. Students will present their findings orally and in a publication-style manuscript for the DPT culminating experience. (Plus-minus letter grade only)

PT 920 Case Reports I (Unit: 1)
Prerequisite: Restricted to graduate Physical Therapy students.

Research and preparation of a case report on the diagnosis and treatment of a patient care problem relevant to physical therapy. (CR/NC grading only)

PT 921 Case Reports II (Units: 4)
Prerequisites: Restricted to graduate Physical Therapy students; PT 920.

Research, preparation, and presentation of a case report on the diagnosis and treatment of a patient care problem relevant to physical therapy. (Plus-minus letter grade; CR/NC not allowed; RP)

PT 930 Mentored Clinical Clerkship (Units: 6)
Prerequisites: Restricted to graduate Physical Therapy students; PT 801, PT 802, PT 803; minimum GPA of 3.0 in coursework to date.

In a clinical setting, students treat patients and work with experienced clinicians who provide mentoring and consultation for case reviews, physical therapy techniques and review of specialty areas; full-time 8 week clinical experience. May be repeated for a total of 12 units. (CR/NC only)

PT 960 Teaching Practicum (Units: 3)
Prerequisites: Acceptance into the Doctoral program in Physical Therapy; PT 704 or equivalent.

Develop necessary teaching skills for classroom, clinic, and laboratory. Students take this course at least twice and teach in the clinic at least one semester and in the classroom, one semester. May be repeated for a total of 12 units. (CR/NC only)

PT 990 Doctoral Colloquium (Unit: 1)
Prerequisites: Restricted to doctoral students in physical therapy and California licensure.

Forum for discussion on current research, application of research to practice. Students participate in all semesters in the doctoral program and are responsible for planning at least one session. Must be repeated for a total of 8 units. (CR/NC only)

PT 996 Directed Studies (Units: 3)
Prerequisite: Restricted to doctoral students in physical therapy.

Development of research skills in preparation for doctoral laboratory original research. Student will be in a laboratory setting with faculty, post-doctoral and pre-doctoral students. Consists of seminars, journal clubs, and laboratory assignments. May be repeated for a total of 9 units. (CR/NC only)

PT 997 Research (Units: 2)
Prerequisites: Restricted to doctoral Physical Therapy students; 9 units of PT 996 or UCSF equivalent; passing score on Oral Comp exam.

Collection of data on original research project under the direction of dissertation advisor and dissertation committee. Determination of objectives and evaluation criteria by advisor based on stage of the project. May be repeated for a total of 8 units. (CR/NC only)

Clinical Laboratory Science

CLS 701 Clinical Chemistry and Urinalysis (Units: 4)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Overview of clinical biochemistry and renal function. Proper specimen collection, instrumentation, quality assurance, physical and chemical analysis of samples. Case histories and laboratory practice emphasize correlation of laboratory findings and clinical conditions. Classwork, 3 units; laboratory, 1 unit. (Plus-minus letter grade only)

CLS 702 Clinical Laboratory Science Internship I (Units: 4)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP. May be repeated for a total of 8 units. (CR/NC grading only)

CLS 703 Clinical Laboratory Science Internship II (Units: 3)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP. May be repeated for a total of 6 units. (CR/NC grading only)

CLS 704 Contemporary Clinical Science Issues (Units: 2)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Includes modules on: 1) Quality control and statistics in the laboratory; 2) Laboratory administration, management, and legislation; 3) Laboratory instrumentation for manual, automated, and computerized techniques; 4) Research methods; 5) Molecular diagnostics theory and clinical practice.

CLS 705 Clinical Laboratory Science Internship III (Units: 3)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP. May be repeated for a total of 8 units. (CR/NC grading only)

CLS 706 Clinical Laboratory Science Internship IV (Units: 4)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP. May be repeated for a total of 8 units. (CR/NC grading only)

CLS 707 CLS Bridge to Clinical Practice (Units: 3)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP (CR/NC grading only)

CLS 708 Clinical Laboratory Science Internship V (Units: 3)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Clinical training in a clinical laboratory for licensure in California and ASCP. May be repeated for a total of 8 units. (CR/NC grading only)

CLS 731 Clinical Hematology and Laboratory Application (Units: 4)
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Identification of blood cells, pathophysiology, hemostasis mechanisms, and disease states of hematological and hemostasis conditions. Theory and application of hematology procedures with emphasis on detection of abnormalities. Interpretation of clinical cases. (Plus-minus letter grade only)
**CLS 753 Clinical Microbiology for the CLS Intern (Units: 4)**
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Principles of diagnostic microbiology that apply to bacteria, fungi, parasites and viruses, including phenotypic and genotypic detection, identification and susceptibility testing using slide and culture evaluation. Case histories and laboratory practice emphasizing correlation of laboratory findings and clinical conditions. Introduction of molecular diagnostic theory and practice. Classwork, 3 units; laboratory, 1 unit.

**CLS 790 Clinical Serology and Immunohematology (Units: 4)**
Prerequisites: Restricted to students in the CLS certificate program and possession of California State trainee license.

Theory and practice of serology and blood banking, including immune system, autoimmune diseases, red blood cell antigens, transfusion reactions, compatibility testing, current serological methodologies such as ELISA and immunofluorescence. Correlation of laboratory findings with pathophysiology. Interpretation of case studies. Classwork, 3 units; laboratory, 1 unit.