

Physical Therapy

College of Health
and Human Services

Department of Physical Therapy

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<http://www.csufresno.edu/physicaltherapy>

B.S., Interdisciplinary Health and Rehabilitation Sciences

M.P.T., Master of Physical Therapy

Minor in Interdisciplinary Health and Rehabilitation Sciences

Physical Therapy

Physical therapists, or PTs, are health care professionals who evaluate and treat people with health problems resulting from injury, disease, or biomechanical dysfunction. Physical therapists are integral members of the primary care team and are involved in prevention of disability and promotion of positive health. They are also acting consultants in restorative care.

Physical therapy includes the following:

1. Examining and evaluating patients with health-related conditions, impairments, functional limitations, and disability in order to determine diagnosis, prognosis, and intervention;
2. Alleviating impairments and functional limitations by designing, implementing, and modifying therapeutic interventions;
3. Preventing injury, impairments, functional limitations, and disability while promoting and maintaining fitness, health, and quality of life in all age populations; and
4. Engaging in consultation, education, and research.

Career Opportunities

Physical therapists practice in acute care or subacute care hospitals, private physical therapy offices, community health centers, industrial health centers, sports facilities, rehabilitation centers, nursing homes, home health agencies, schools, or pediatric centers. Others work in research institutions or teach in colleges and universities.



Faculty and Facilities

The faculty is composed of physical therapists that collectively have advanced preparation in all major areas of physical therapy. Most have earned doctorates or advanced specialty certification. Together they represent extensive years of clinical experience. Many faculty members continue to engage in practice in tandem with their faculty responsibilities. Several have held significant positions of leadership in professional associations and have authored textbooks used nationally; several also publish regularly in professional journals. Their efforts have been recognized frequently with prestigious awards from the profession and the community.

Clinical laboratory experiences are conducted in a variety of health care facilities throughout the state of California and out of state on a limited basis.

Faculty

Kathleen A. Curtis, *Chair*

Janet K. Duttarar

Joanne M. Laslovich

Gary L. Lentell

Robert K. Martin

Peggy Trueblood

Toni Tyner

Physical Therapy Education

The Department of Physical Therapy offers an undergraduate pre-physical therapy option and a Master of Physical Therapy program which meet pre-professional and professional education requirements to become

a licensed physical therapist in all 50 states. This combined path of study will require students to complete a 124-unit undergraduate Bachelor of Science degree in Interdisciplinary Health and Rehabilitation Sciences with an option in Pre-Physical Therapy before admission to the Master of Physical Therapy degree program. Students with other majors are also welcome to apply to the Master of Physical Therapy program.

Interdisciplinary Pre-Health and Rehabilitation Professions Education

The department offers a B.S. degree in Interdisciplinary Health and Rehabilitation Sciences, with preprofessional options in Pre-Physical Therapy, Pre-Occupational Therapy and Pre-Rehabilitation Services. These degree options prepare students to meet the prerequisite requirements of graduate programs in Physical Therapy, Occupational Therapy, and Rehabilitation Counseling.

In addition to the major, a minor in Interdisciplinary Health and Rehabilitation Sciences is recommended for students pursuing career paths in other health and human service professions, such as nursing, communicative disorders, health science, dietetics, dentistry, chiropractic, medicine, optometry, clinical psychology and counseling.

B.S. in Interdisciplinary Health and Rehabilitation Sciences

The major is designed to prepare undergraduate university students with prerequisite coursework, knowledge, attitudes and skills that will help them to gain admission to and succeed in graduate programs in the rehabilitation and health professions.

Rehabilitation professionals provide specialized services that enhance the function, self-care, mobility, vocational potential, communication or adaptive skills of persons with disabilities. Their services may result in an individual post head-injury being able to live independently in the community, an elderly person following hip fracture being able to ascend a flight of stairs, or an individual with a visual impairment being able to walk to a bus stop independently to go to work. They may fabricate equipment to enable a person with an amputation to walk, or a person with quadriplegia to control their environment in the absence of movement. Professional education for rehabilitation professions requires graduate education.

The needs of the health care market are changing. These changes require that entering health professionals be not only aware

of practice strategies to maximize resources and contain costs, but also deliver a variety of interrelated services that meet the client's needs. Integrated service delivery models require a different type of education, where professionals receive training in collaborative processes, sharing goals for patients and clients. Such goals can be met more easily through an interdisciplinary program which introduces the student to the practice of numerous professions, allows for practical observations and mentoring and enables the student to form role concepts which incorporate interdisciplinary work rather than a solo professional track.

Bachelor of Science Degree Requirements

Interdisciplinary Health and Rehabilitation Sciences Major

The IHRS major requires 33 units of core coursework from several disciplines. This coursework is intended to prepare the student with an interdisciplinary perspective to enter graduate programs in the rehabilitation professions, such as physical therapy, occupational therapy and rehabilitation counseling. Core course content includes professional, developmental, health, ethical, psychosocial and behavioral issues related to aging, illness, and disability.

A major in Interdisciplinary Health and Rehabilitation Sciences requires a minimum of 63 units of study, which includes completion of the 33 unit core and one option (30-45 units). The General Education requirement, special course requirements, and electives complete a total of at least 124 units required for the B.S.

Note: Students may not fulfill option requirements with courses taken to fulfill core requirements.

Interdisciplinary Health and Rehabilitation Sciences **Units**

Major requirements.....	63-78
Core Program	
(required of all options)	33
<i>Lower-Division Requirement</i>	
HS 92	(3)
<i>Upper-Division Requirements</i>	
HHS 105 or PHTH 102 or COUN 102; GERON 115 or HS 115; HS 114; PSYCH 169 or RLS 125; PHTH 105, 106, 107, 127	(24)
<i>Select 6 units from the following:</i> CSD 91/92, 80; CLS 101; GERON 10; GERON 125 or SWRK 125; HS	

90, 131, 182, 190; KINES 118, 137;
RLS 101, 142; PHTH 190;
SWRK 20, 135 (6)

Select one of the following options 30-45

Pre-Physical Therapy Option.....(45)
CHEM 3A, 3B; NURS 124;
PHTH 119, 125, 126; PHYAN
65, 140; PHYS 2A, 2B;
PSYCH 10

Select a minimum of 6 units from the following: UNIV 1, CSD 91 or 92, 80; CLS 101; GERON 10; GERON 125 or SWRK 125; HS 90, 131, 141, 182, 190; KINES 118, 137, 163; RLS 101, 142; PHTH 190; SPAN 1A or 1B; SWRK 20, 135

Pre-Occupational Therapy Option (37-38)
ART 60 or 70; ANTH 2; COUN
174; PHYAN 64 or PHTH 119;
PHYAN 65; PHYS 2A; PSYCH 10;
PSYCH 155 or CFS 38; PSYCH
166

Select a minimum of 6 units from the following: UNIV 1, CSD 91 or 92, 80; CLS 101; GERON 10; GERON 125 or SWRK 125; HS 90, 131, 141, 182, 190; KINES 118, 137, 163; RLS 101, 142; PHTH 190; SPAN 1A or 1B; SWRK 20, 135

Pre-Rehabilitation Services Option (30-31)
COUN 174 or PSYCH 154;
COUN 176 or PSYCH 166; HS
110, 111; PHTH 119 or PHYAN
64; PHYAN 65; PSYCH 10

Select a minimum of 6 units from the following: UNIV 1, CSD 91 or 92, 80; CLS 101; GERON 10; GERON 125 or SWRK 125; HS 90, 131, 141, 182, 190; KINES 118, 137, 163; RLS 101, 142; PHTH 190; SPAN 1A or 1B; SWRK 20, 135

General Education requirements..... 51
Electives and remaining degree requirements 1-16*

(See *Degree Requirements*); includes upper-division writing skills

Total..... 124

*This total indicates that 3 units of PSYCH 10 in G.E. Breadth D3 and one of the following G.E. courses are being applied to the IHRS major: CHEM 3A or PHYS 2A (B1); CSD 92 or SPAN 1B (C2); GERON 10, CFS 38, HS 90, or SW 20 (E1).

Students seeking admission to the bachelor of science degree program may apply at any point in their undergraduate program. Majors in Interdisciplinary Health and Rehabilitation Sciences (IHRS) must be in good standing with the university and must maintain an overall GPA of 2.5 after admission to the major. This is a minimum as the GPA requirements for admission to graduate programs in the rehabilitation professions may be considerably higher. To enroll in upper division courses, students must have already taken designated lower division courses. Students must meet prerequisite requirements for individual courses.

This curriculum is intended to prepare the student with an interdisciplinary perspective to enter graduate programs in physical therapy, occupational therapy and rehabilitation counseling. There may be additional requirements for admission to graduate programs.

Students are required to see an adviser in Interdisciplinary Health and Rehabilitation Sciences for assistance in planning the major.

Minor in Interdisciplinary Health and Rehabilitation Sciences

The minor is designed to introduce undergraduate university students with the concepts of rehabilitation and health care to augment a pre-professional program of study for students seeking careers in the health field.

Minor Requirements

The IHRS minor requires 24 units of core coursework from several disciplines. This coursework is intended to prepare the student with an interdisciplinary perspective to enter any health profession. Core course content includes professional, developmental, health, ethical, psychosocial and behavioral issues related to aging, illness, and disability.

CORE:

Lower-Division Requirement (3 units)
HS 92

Upper-Division Requirements (15 units)
HHS 105 or PHTH 102, GERON 115 or HS 115, PHTH 105, PHTH 106, PHTH 107

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Elective Requirements (6 units)

Students must select electives from the following pool:

CSD 91/92, 80; CLS 101; GERON 10; GERON 125 or SWRK 125; HS 90, 131, 182, 190; KINES 118, 137; PHTH 190; RLS 101, 142, SWRK 20, 135

Total required units 24

Students seeking admission to the minor in Interdisciplinary Health and Rehabilitation Sciences (IHRS) may apply at any point in their undergraduate program. Students who minor in Interdisciplinary Health and Rehabilitation Sciences (IHRS) must be in good standing with the university and must maintain an overall GPA of 2.50 after admission to the minor. This is a minimum, as the GPA requirements for admission to graduate programs in the rehabilitation professions may be considerably higher. To enroll in upper division courses, students must have already taken designated lower division courses. Students must meet prerequisite requirements for individual courses.

Students are required to see an adviser in interdisciplinary health and rehabilitation sciences for assistance in planning the minor.

Note: The IHRS Minor also requires 6 upper-division units in residence.

Master of Physical Therapy

Physical therapy practice today is based on a well-developed body of scientific and clinical knowledge. Physical therapists apply knowledge from the basic, behavioral, and social sciences. Physical therapists must also demonstrate effective communication skills. Insight and sensitivity to the unique needs of diverse populations is essential to effectively maximize the individual's functional potential in society.

The physical therapy student will be educated with a thorough knowledge base and will be capable of critical thinking, ethical practice, and service to meet the changing needs of society. Students learn effective analysis and interpretation of data with which to diagnose neuromusculoskeletal movement dysfunction, make treatment-planning decisions, and predict outcomes based on sound research principles.

The graduate will be prepared to assume the multidimensional roles of the master clinician, including patient care, education, consultation, and administration of physical therapy services in the broad spec-

trum of physical therapy practice settings and across the broad age spectrum from neonates to geriatrics.

Individuals must possess a baccalaureate degree and complete all prerequisite requirements prior to beginning the professional major. Following successful completion of the professional curriculum, the student receives the M.P.T.

Completion of a postgraduate internship is required to be eligible to seek a license to practice physical therapy in the state of California.

At present, the program is a six semester full-time course of study that prepares students for entry-level practice in a variety of clinical settings. The curriculum design is a regional integrated approach to patient management with special emphasis on problem solving. Substantial revisions in the master's program are being considered and will be implemented no later than the fall semester of 2003. Students preparing for admission are advised to stay closely in touch with the program for details. Changes will be distributed in brochures as they are finalized and posted on the department's Website at <http://www.csufresno.edu/physicaltherapy>.

Admissions to Master of Physical Therapy Graduate Program

Students are only admitted in the fall semester. Students should apply to the program in the fall prior to anticipated entry into the Physical Therapy Program. Admission to the Master of Physical Therapy program requires two applications: (1) the California State University Graduate Application, which can be submitted online at <http://www.csumentor.edu>, and (2) the Physical Therapy Department application, which can be downloaded from the department web site at <http://www.csufresno.edu/physicaltherapy>. Review the *Graduate Studies* section in this catalog for graduate admissions information.

Postbaccalaureate students may apply to the university as "postbaccalaureate undeclared" to pursue prerequisite courses. For these postbaccalaureate applicants, only the CSU Graduate Application, indicating "Undeclared" as the major/objective, should be submitted.

Physical Therapy Applications are available: **July 1.**

Physical Therapy Application Filing Period: **October 1 through November 30.**

Students seeking admission to the Master of Physical Therapy program must submit applications to both the Division of Graduate Studies and the Department of Physical Therapy. A complete application includes an information application, an official transcript from each institution attended including previous spring and summer terms, official GRE test scores, observation verification, and letters of reference. GRE scores are considered during program admissions; however, there is no minimum GRE requirement. Late transcripts or documentation will result in not being considered. Follow program application instructions.

Pre-Admission Requirements for Master of Physical Therapy Program

Lower-division

Anatomy and Physiology

Fresno State: PHTH 119, PHYAN 65
Transfer: Human anatomy with lab and human physiology with lab.

Chemistry

Fresno State: CHEM 1A or 3A, and CHEM 3B
Transfer: Inorganic and organic or biochemistry with labs

Psychology

Fresno State: PSYCH 10
Transfer: General psychology

Physics

Fresno State: PHYS 2A, 2B
Transfer: Physics with lab including mechanics, heat, light, sound, and electricity

Statistics

Fresno State: HS 92
Transfer: Introduction to basic statistics

Upper-division

Psychology

Fresno State: PSYCH 169 or RLS 125
Transfer: Psychology of disability course

Biological Sciences

Fresno State: PHYAN 140
Transfer: Neurophysiology course

The screening committee reviews admission criteria. Prior to admission to the program, the applicant must meet the following requirements:

1. Hold or be eligible to receive a bachelor's degree by the end of the spring semester prior to admission to the program.

2. Have completed or be currently enrolled in the specified lower-division prerequisite courses at time of application. All lower-division courses must be completed by the end of the fall semester prior to admission to the program.
3. Submit GRE test scores by the end of the fall semester prior to admission to the program. Students are encouraged to take the GRE early to avoid delays in acceptance for graduate work.
4. Enroll in upper-division prerequisite courses during the spring semester prior to admission to the program
5. Receive a grade of *C* or better in each prerequisite course and maintain a total prerequisite GPA of 3.0. An overall GPA of 2.5 on the last 60 units completed is required. The Department of Physical Therapy recommends an overall GPA of 3.0 on the last 60 units completed. *CR/NC* grades, correspondence courses, or independent study courses cannot be used for prerequisite requirements. Only those prerequisite courses completed by the end of the fall semester in which application is made will be counted toward ranking of candidates for selection into the graduate program.
6. Provide evidence of knowledge of physical therapy through employment, volunteer work, or observation in a physical therapy department for a minimum of 100 hours. Fifty hours must be in a general acute care setting; 50 hours may be in a special area of practice. All observation hours must be under the supervision of a licensed physical therapist.
7. Submit three letters of recommendation, as specified in application instructions.
8. Participate in a personal interview.
9. Submit grades and final transcripts from institutions other than Fresno State as soon as grades are posted. Transcripts should be requested prior to the end of the term.

Meeting the foregoing criteria does not guarantee acceptance into the Master of Physical Therapy program. Students transferring from community colleges and other colleges or universities who meet the foregoing criteria are considered on the same basis as California State University, Fresno students applying for admission to the program. An applicant must meet the above

criteria to be considered for conditionally classified standing in the graduate program.

Classified Graduate Standing

In addition to meeting all admission requirements listed above, the following additional criteria must be met for the applicant to be considered for classified graduate standing:

1. Completion of all (58 units) of coursework listed below with a GPA of 3.0 each semester and overall, and a *C* or better in every course.
2. Be recommended by the physical therapy faculty.

An applicant admitted with conditionally classified standing may be granted classified standing upon meeting the above requirements.

Pre-professional prerequisites for the Master of Physical Therapy Program

	<i>Units</i>
Natural Sciences Category	18-19
CHEM 1A or CHEM 3A; CHEM 3B; HS 92; PHYS 2A, 2B	
Biological Sciences Category	21
PHYAN 65, 140; PHTH 119, 125, 126, 127	
Behavioral Sciences Category	10
PSYCH 10; PHTH 106; PSYCH 169 or RLS 125	
Pre-Clinical Sciences Category	8
NURS 124; PHTH 105, 107	
Total	57-58

For department application or admission information, write to the following address and enclose a self-addressed, stamped, legal-size envelope:

Admissions Coordinator
 Department of Physical Therapy
 College of Health and Human Services
 California State University, Fresno
 2345 E. San Ramon Ave. M/S MH29
 Fresno, CA 93740-8031

The Master of Physical Therapy program is open to all college graduates with a bachelor's degree who have met upper- and lower-division prerequisite requirements and show intellectual promise and ability to perform at a satisfactory level during their graduate studies.

Criteria for Departmental Retention and Progression

Criteria for retention in the Master of Physical Therapy program and progression to the next semester in the program:

1. Maintaining a minimum 3.0 GPA each semester in the program
2. Maintaining a minimum cumulative 3.0 GPA in M.P.T. degree requirements
3. Achieving a minimum grade of *C* (or *CR*) in each PHTH course.*
4. Enrolling in and completing all required courses in sequence.

Students must carry malpractice insurance, must purchase an appropriate laboratory coat, and must provide their own transportation to hospitals and clinics for off-campus classes and clinical laboratories. Additional laboratory fees may be required. Students must also provide for all expenses while taking the post-graduate clinical internship. Expenses include student fees, housing, meals, and travel.

*Any student receiving a grade less than *C* will not be able to continue in the program, regardless of semester or overall GPA. Please note that grade substitution is not permitted at the graduate level. A student must receive a grade of *CR* in all clinical education courses (PHTH 152, 251-257; PHTH 275). A student receiving a grade of *C* or *NC* in a PHTH course will have one opportunity to repeat the course. A second grade of *C* or *NC* in a repeated PHTH course will result in disqualification from the program.

Requirements for the Master of Physical Therapy

	<i>Units</i>
Core Requirements	62
(see <i>Advising Note 1</i>)	
PHTH 206, 207, 208, 209, 217, 218, 219, 226, 227, 228, 229, 236, 237, 238, 239, 254, 255, 256, 257, 258, 259, 260, 291	
Electives	6
PHTH 240-249, 292A, 292B	
Comprehensive Examination	0
Total	68

Licensure

Certification requirements..... **12**
 PHTH 275 (see *Advising Note 2*)

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Advising Notes

1. PHTH 256 and 257 clinical experiences and PHTH 275 postgraduate internship are conducted in a variety of clinical facilities through out the state. Students must provide for all expenses including housing, meals, and travel. These are offered *CR/NC* only.
2. PHTH 275 must be completed to be eligible to take the state examination for licensure.

Advancement to Candidacy Requirements

Students usually advance to candidacy following the completion of two full-time semesters of graduate coursework in the Master of Physical Therapy program. Prior to advancement to candidacy, students must have the following:

1. Classified graduate student standing.
2. A minimum GPA of 3.0 (overall, program, and California State University, Fresno) on all coursework completed after the date of the first course to be included in the master's degree program, with no grade below *C*.
3. Demonstrated required competency in clinical coursework (PHTH 251-257) with grade of *CR*.
4. Demonstrated graduate level writing proficiency (assessment of a portfolio of writings is used). This requirement must be met within one semester of classified graduate standing. Contact the Department of Physical Therapy for detailed requirements.
5. Approval from the faculty to take the department's comprehensive written examination with an oral defense.

A culminating experience is required of all Fresno State master's degree candidates. Students in physical therapy satisfy the requirement through a comprehensive written examination with an oral defense.

COURSES

Physical Therapy (PHTH)

102. Rehabilitation Professions (3)

(Same as COUN 102.) Overview of various rehabilitation professions, the development of an interdisciplinary rehabilitation service, and principles and philosophies of rehabilitation. Responsibilities, educational requirements, practice parameters, and job locations of rehabilitation professionals.

105. Medical Terminology for Health Professionals (3)

Study of word parts, definitions, spelling, analysis, synthesis, and use of medical vocabulary. This course is taught in classroom sections or may be taken entirely over the Web.

106. Patient Practitioner Interaction (3)

Prerequisites: PSYCH 169, GERON 115. Patient-practitioner interaction in the health care delivery situation, with an emphasis on the development of effective patient/therapist communication skills for a variety of health care situations, including patient education and chronic and terminal illness.

107. Health Care Issues (3)

Analysis of the health care system and its influence on access to and delivery of health care services. Special focus on needs and mechanisms for integrated service delivery for prevention and care of acute and chronic illnesses and disabilities.

110. Patient Advocacy for Health Practitioners (3)

Prerequisite: PSYCH 10. May be taken concurrently with PSYCH 166. Recommended for health professions students, but open to all students. Exploration of psychosocial and cultural considerations and community resource management for persons with physical impairment. (Formerly HSW 101)

119. Anatomy of the Appendicular Skeleton (3)

An in-depth study of the structure and function of the musculoskeletal system with a special emphasis on the joints of the upper and lower extremities. Includes a laboratory utilizing cadavers and prosected material to integrate muscle and tendon attachments with bony landmarks. Joint Structure and function will also be demonstrated. (2 lecture, 3 lab hours) (Instructional materials fee, \$35)

124. Research Methods in Physical Therapy (2)

Prerequisite: HS 92 or MATH 11. Study of research design and critical reading of research literature.

125. Anatomy of the Axial Skeleton (4)

Prerequisite: PHTH 119. Study of the structure, function and biomechanics of the neuro-musculoskeletal systems with emphasis on spine, pelvis, thoracic/peritoneal, visceral and temporomandibular joint.

Includes dissection lab and prosected material. (3 lecture, 3 dissection lab hours) (Instructional materials fee, \$35)

126. Applied Pathophysiology (3)

Prerequisite: PHYAN 65. Advanced study of physiology of body systems and responses to normal aging, environmental influences, and pathological dysfunction. Includes cardiovascular, pulmonary, endocrine, and integumentary systems.

127. Neuromuscular Processes in Human Development and Aging (3)

The study of human development from birth to senescence with focus on concepts of motor and neurological development processes integral to evaluation and treatment intervention in neurological disability.

131. Evaluation and Clinical Management of Musculoskeletal Conditions II (4)

A continuation of Evaluation and Clinical Management of Musculoskeletal Conditions I. (3 lecture, 3 lab hours)

133. Evaluation and Clinical Management of Neurological Systems II (3)

Continuation of Evaluation and Clinical Management of Neurological Systems I. (2 lecture, 3 lab hours)

152. Clinical Lab II (2)

The application of physical therapy skills and procedures in selected hospitals. *CR/NC* grading only.

180T. Topics in Physical Therapy (1-3; max total 12 if no topic repeated)

Prerequisite: permission of instructor. Advanced techniques in physical therapy and new trends relating to the care of patients.

190. Independent Study (1-3; max total 6)

See *Academic Placement — Independent Study*. Approved for *SP* grading.

GRADUATE COURSES **Physical Therapy (PHTH)**

For more graduate course listings, please visit the Web site at <http://www-catalog.admin.csufresno.edu/current/physthercrs.html>.

200. Advanced Anatomy and Pathokinesiology (4)

Prerequisite: PHTH 125. Investigation of concepts of biophysics, analysis of normal and abnormal movement. Includes dissection of lab and prosected materials. (3 lecture, 3 dissection lab hours) (Instructional materials fee, \$35)

201. Advanced Evaluation and Clinical Management of Cardiopulmonary Dysfunction (3)
Prerequisite: PHTH 126. Investigation and analysis of evaluation and therapeutic intervention in the clinical management of the cardiovascular/pulmonary system. (2 lecture, 3 lab hours)

203. Advanced Evaluation and Clinical Management of Special Orthopedic Problems (3)
Prerequisites: PHTH 131, 200. Advanced specialized approaches to musculoskeletal disabilities with emphasis on evaluation techniques, therapeutic intervention and program planning for the patient with selected orthopedic problems. (2 lecture, 3 lab hours)

204. Advanced Evaluation and Clinical Management of Special Neurological Problems (3)
Prerequisites: PHTH 127, 133. Advanced specialized approaches to neurological disabilities with emphasis on evaluation techniques, therapeutic intervention and program planning for the patient with selected neurologic problems. (2 lecture, 3 lab hours)

221. Seminar in Clinical Decision Making I (2)
Use of decision analysis and case management theory to master concepts in clinical decision making. Analysis and research of patient problems, synthesis of physical therapy theory and integration of cultural, psychosocial, and community resources to formulate treatment consistent with contemporary practice.

222. Seminar in Clinical Decision Making II (1)
Prerequisite: PHTH 221. Continuation of Seminar in Clinical Decision Making I.

223. Seminar in Clinical Decision Making III (1)
Prerequisite: PHTH 222. Continuation of Seminar in Clinical Decision Making II.

226. Electrophysiologic Approaches to Patient Care (3)
Prerequisite: PHTH 126; PHYAN 140. Exploration of advanced theories and principles related to the clinical use of electrophysiologic modalities. Includes electroneuromuscular stimulation for motor performance, nerve function, pain management and tissue repair. (2 lecture, 3 lab hours)

231. Seminar in Health Care Issues I (2)
Investigation and discussion of the health care delivery system and its impact on the delivery of physical therapy services.

232. Seminar in Health Care Issues II (2)
Prerequisite: PHTH 231. Investigation and discussion of administration and organization of physical therapy services in the health care delivery system.

240. Advances in Orthopedic Physical Therapy I (2)
Prerequisite: PHTH 203 or permission of instructor. Exploration of treatment of orthopedic problems.

241. Advances in Physical Therapy II (2)
Prerequisite: PHTH 240 or permission of instructor. A continuation of Advances in Orthopedic Physical Therapy I.

242. Advanced Clinical Anatomy I (2)
Prerequisite: PHTH 200 or permission of instructor. Exploration of clinical application of anatomical structures of joints.

243. Advanced Clinical Anatomy II (2)
Prerequisite: PHTH 242 or permission of instructor. A continuation of Advanced Clinical Anatomy I.

244. Advances in Management of the Aging Population (2)
Prerequisite: PHTH 127 or permission of instructor. Exploration of special approaches and considerations of intervention of conditions of aging.

245. Advances in Management of the Neurological Patient (2)
Prerequisite: PHTH 204 or permission of instructor. Exploration of advanced multi-system treatment approaches in neuro-rehabilitation.

246. Management Strategies for Independent Practice (2)
Prerequisite: permission of instructor. Exploration of strategies for developing and maintaining a physical therapy service in an independent environment.

247. Sports Injuries (2)
Prerequisite: PHTH 200 or permission of instructor. Exploration in advances in management of sports injuries.

248. Advances in Cardiac Rehabilitation (2)
Prerequisite: PHTH 201 or permission of instructor. Exploration of the components of implementing and maintaining multilevels of cardiac rehabilitation and the management of patients with cardiac disease.

249. Contemporary Issues in Delivery of Physical Therapy Services (2)
Prerequisite: permission of instructor. Exploration of emerging trends and issues in contemporary physical therapy practice.

251. Advanced Clinical Practicum I (2)
Clinical practice in selected health care facilities throughout the state. *CR/NC* grading only.

252. Advanced Clinical Practicum II (2)
Prerequisite: PHTH 251. Clinical practice in patient evaluation, treatment planning, and outcome evaluation in a variety of clinical settings located throughout the state. *CR/NC* grading only.

253. Advanced Clinical Practicum III (2)
Prerequisite: PHTH 252. Continuation of Advanced Clinical Practicum II. *CR/NC* grading only.

275. Postgraduate Clinical Internship (12)
Prerequisite: PHTH 253. Final experience for majors. The internship is 18 weeks of clinical experience at selected facilities throughout the state. Certification of internship completion is required before the graduate is eligible to take the state examination for licensure. *CR/NC* grading only.

290. Independent Study (1)
Supervised guidance for students who wish to do additional work on research. Approved for *SP* grading.

292A. Advanced Physical Therapy Research: Problem Formulation and Method (3)
Explores advanced topics in physical therapy research including conceptualization, operation utilization, design and sampling strategies. It allows students to prepare a proposal for an independently pursued, empirically based research project.

292B. Advanced Physical Therapy Research: Data Collection and Analysis (3)
Prerequisite: PHTH 292A. Examines advanced strategies for physical therapy research data collection and analysis. Students are able to independently collect data, analyze it and report findings from a research project.

IN-SERVICE COURSE
(See *Course Numbering System*.)

Physical Therapy (PHTH)

302T. Topics in Physical Therapy (1-6; repeatable with different topics)
Selected topics in physical therapy for practicing clinicians in the health fields.